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MAY, 1878.

EARNESTLY have we desired to see the people of this country appreciate the beauties of nature, study nature's laws, and, above all, love flowers and delight in their culture. This we believed necessary to the refinement, health and happiness of our people, and essential to the well-being of the country. For a third of a century, through the press, we have kept the subject before the people, published millions of pamphlets that have reached every hamlet and almost every home in the land, and paid at least ten thousand dollars in prizes for exhibitions of flowers. The friends of the flowers have not labored in vain. No country in the world, in any age, has made such rapid progress as has been witnessed in our own during the last twenty years. The ladies and youth are earnest learners and intelligent cultivators; the men are plodding along slowly, but must march to the music of taste and refinement.

Among the many evidences of rapid advancement that have recently reached us, we are particularly pleased with the letters from leading men of towns and villages, in various parts of the country, inquiring the best means of creating, an interest in horticultural pursuits. As a sample of these we give the following :

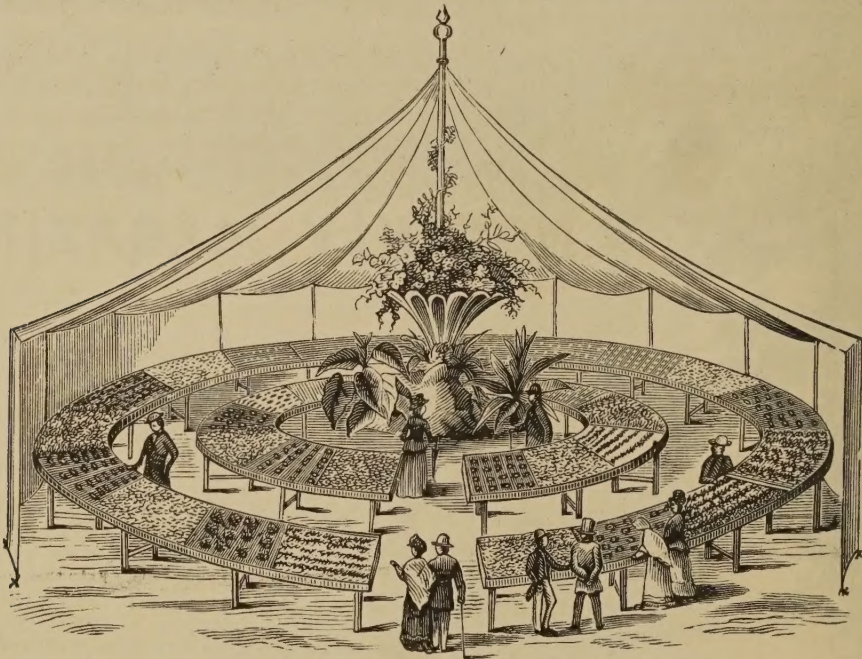
JAMES VICK :—RESPECTED FRIEND :—I am very much interested in the welfare of the operatives of a large cotton mill here, with which I am connected, and if it is practicable would like to interest them more in the cultivation of flowers, by offering prizes for best exhibits of pot plants and cut flowers next fall. I hardly

know the best way to start the matter, and thought if you were not too much pressed for time you might be willing to give me a few hints, or put me in a way to get such information as I need. Any help that you can give me will be thankfully received. I think one of your catalogues issued a few years since gave some illustrations and suggestions as to the arrangement of flowers at such exhibitions.—D. S. W., *New Bedford, Mass.*

Where there is considerable interest on the subject it is a very easy matter to secure regular and creditable exhibitions of flowers, even in very small places. A few leading spirits must in this, as in all other matters, take the initiatory. Through the paper, if one is published in the neighborhood, or through printed or written circulars, invite a meeting of every one interested, when, if enough attend to secure officers, all is well. Organize a society, pass a few simple laws, and then, by personal application, secure members. Make the annual fee of membership a dollar or two, and this will provide a fund for premiums. To increase this sum persuade the dry goods dealers to subscribe a little fund of ten dollars or so for the best exhibition of pot plants, the grocery store keepers to make up another purse equally large—for, of course, they will not be beaten by the sellers of tape and calico—for the best display of Annuals; while the ministers and deacons must show their good taste by offering a respectable prize for the best Easter ornament; the young ladies and gentlemen will be willing to give a good deal for a creditable show of bridal bouquets, and even the undertaker will not be satisfied unless he can be permitted to contribute something to call out a good display of wreaths, crosses, anchors and similar floral ornaments.

After providing funds, prepare the premium list, which should receive an early and general circulation, and select a suitable place for the exhibition, with conveniences for the exhibitors. Many newly-organized societies fail in providing necessary conveniences for exhibiting flowers, thus causing dissatisfaction and, even-

guard around, and about eighteen inches from the table, as shown on next page. This space furnishes a place for the committees and for exhibitors, where they can stand and answer such questions as the people may ask, or give any necessary information. If it is desired to make the exhibition somewhat elegant in



DESIGN FOR FLORAL TENT.

tually, the ruin of the society. Where a public hall is at command it is in most cases best to secure it, and, where bottles for small flowers can be hired of druggists, and vases, or even fruit jars, of crockery stores, for the exhibition of larger flowers and bouquets, this plan is good and economical. It will be necessary, also, to prepare a few tables, of matched boards, fastened together by battens on the under side, to stand upon wooden horses; and these should be owned by the society and stored for after use. When no public hall is accessible, a tent can be hired and erected in the public square or any vacant ground, and in that case we would suggest an arrangement something like that shown in the engraving. Make the tables of rough boards, about three and a half feet in width. All round the edges nail a piece of board, that at the back five or six inches in width, and at the front about four inches, projecting above the table. Then cover the tables to the height of the board with sand, which, when moistened, will keep the flowers as well as if in water. The taller flowers must be placed at the back of the table, and for bouquets a few fruit jars should be provided. If a crowd is anticipated, to keep them from pressing upon the tables and injuring the flowers, place a

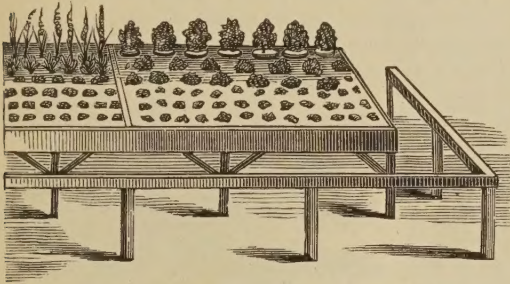
appearance, the sand can be covered with moss, and the table and guard ornamented with ever-green or wreaths. Place a barrel of water near the entrance, or some other convenient place, and also two pails and two sprinkling pots, a hammer and a few nails. For the display of plants in pots, a small, plain stand, in the center, something as represented in the engraving on the next page, should be provided.

When it is designed to create an interest among the young, as in the case of our correspondent, or among those of older years who lack both interest and experience, it will be necessary to pursue a different course, and do a little missionary work. Perhaps we could not do better than copy a little sketch published some years since, on our return from Europe, after witnessing an exhibition both novel and interesting:

A SOLITARY FOOTMAN.

A few months ago a weary, but, apparently, light hearted and tolerably good looking person (in his own estimation,) might have been seen entering a manufacturing town of Europe. We cannot call him a "solitary horseman," in truth, to which we design to adhere very strictly, because there was no horse in the case. We must, therefore, call him a solitary footman. His dress was somewhat peculiar, enough so, at least, to attract the attention of even the boys, and mark him as a foreigner. He did not make his

business known, but with a steady pace walked directly past every public-house, without even stopping for a mug of beer. This, if nothing else, would have been sufficient to prove him a stranger and a foreigner. On, on, he pursued his course, occasionally casting an interested glance at any building of particular prominence, but apparently most interested in the little cottage gardens, often pausing for a moment before those that seemed especially attractive, and looking with admiration upon the house plants that adorned the windows of



SECTION OF EXHIBITION TABLE WITH GUARD.

many an humble and pleasant home. Heedless of the general attention which his appearance attracted, the stranger hastened on, his evident intention being to visit the public square, in which was erected several tents for an exhibition of flowers, — a display of peculiar interest, and especially so on account of the number and character of the exhibitors.

Early in the spring, some kindly disposed persons had collected a little fund and employed a florist of the town to grow several thousand plants of Annuals, such as Cockscombs, Stocks and Balsams, some hundreds of young Fuchsias, Pelargoniums, &c. To every one in the Asylum for the Aged, who would engage to care for a plant, according to certain printed rules, and exhibit it at the show to take place on a specified day, a potted plant was given. The same privilege was accorded to members of the Incurable Hospital. One of the most interesting features, however, was the exhibition made by children. To the children of cottagers, who had a patch of ground, a couple of dozen annual plants were given—to others a pot plant, or, perhaps, a Stock, Balsam, or Cockscomb, in a pot. Those who received Annuals in pots exhibited in a class, those who had the Annual plants for the open ground in another class. The Hospital and Asylum, also, exhibited in separate classes. Small prizes were offered, and the competition was close and exciting.

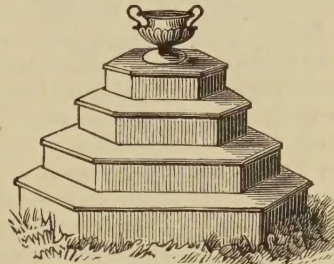
The tents were decorated with flags, the old people and the children were alike happy, and perhaps the parents of the little ones were the happiest of all. It was a beautiful holiday. The stranger was delighted, and felt well paid for his long tramp; and he thought sometime when he got home to America, he would tell this story in his GUIDE. Can we not do something like it in America?

Something like this we can certainly do, and with the most satisfactory results. Suppose three or four varieties of common Annuals, say the Aster, Balsam and Petunia, should be selected, and a paper of each given to those who would promise to care for them, and exhibit the flowers at an autumn exhibition. Or a florist would, for a small sum, grow a thousand or two of plants, and these might be distributed at the proper time for planting. Calls would be plenty, and many of the plants would be well cared for. One of our old friends, L. G. PARDEE, Esq., of Western New York, removed to

New York city, and desiring to benefit the children, made some large hot-beds in his back yard, grew thousands of annual plants, and then announced in the public schools that on a certain Saturday he would give three plants to all who came to his residence. His house was besieged from morning until night, and not having time to supply all, he met the children at four o'clock every afternoon for a week, until his stock was exhausted; and then, not wishing to disappoint the little ones, at his solicitation many of the florists of the city benevolently added to his store. If notified in season, any florist would furnish a thousand young pot plants at a very low price.

We have not space for details, but these will suggest themselves at once to our readers, and improvements will be found constantly necessary as the good work progresses. Be in earnest, and embrace every opportunity to advance the interests of the association. Enlist the services of the young, and especially of the ladies, in preparing the decorations, etc. The prizes need not be large, but numerous, so as to reward the meritorious as generally as possible.

Who can realize the good that would flow from such small beginnings if persisted in for a series of years? Such a town would become famous all over the land, and would rival the Borough so beautifully described by the old English poet, GEORGE CRABBE, where "all of some grand good possessed, were busy and were blessed,"—some indulged in fancy pigeons, others in canaries, while still others "magnified in microscope the mite." The poet's friend, the Weaver, though laboring for bread, was a most enthusiastic naturalist—poor in pocket, he was rich in head and heart. No object of beauty,



STAND FOR POT PLANTS.

whether butterfly or flower, escaped his notice, while in his garden were found the choicest of Flora's treasures. We could not resist the temptation to give our readers a portion of this poem, if only to show the technically correct, yet poetical description of a *perfect Carnation*, and the exultation of the Weaver in bearing off the prize for his "king of flowers" at the Floral Show.

Oft have I smiled the happy pride to see
Of humble tradesmen, in their evening glee :
When of some pleasing, fancied good possessed,
Each grew alert, was busy, and was blessed ;
Whether the call-bird yield the hour's delight,
Or, magnified in microscope, the mite ;
Or whether tumblers, croppers, carriers seize
The gentle mind, they rule it and they please.

There is my friend the Weaver ; strong desires
Reign in his breast ; 'tis beauty he admires :
See! to the shady grove he wings his way,
And feels in hope the raptures of the day—



MY FRIEND THE WEAVER.

Eager he looks ; and soon, to glad his eyes,
From the sweet bower, by nature formed, arise
Bright troops of virgin moths and fresh-born butterflies ;
Which broke that morning from their half-year's sleep,
To fly o'er flowers where they were wont to creep.

Above the sovereign oak a sovereign skims,
The purple emperor, strong in wing and limbs ;
There fair Camilla takes her flight serene,
Adonis blue, and Paphia silver-queen ;
With every filmy fly from mead or bower,
And hungry Sphinx, who threads the honeyed flower ;
She o'er the Larkspur's bed, where sweets abound,
Views every bell, and hums the approving sound ;
Poised on her busy plumes, with feeling nice

She draws from every flower, nor tries a floret twice.

He fears no bailiff's wrath, no baron's blame,
His is untaxed and undisputed game ;
He both his Flora and his Fauna shows ;
For him is blooming in its rich array,
The glorious flower which bore the palm away ;
In vain a rival tried his utmost art,
His was the prize, and joy o'erflowed his heart.

" This, this is beauty ; cast, I pray, your eyes
On this my glory ! see the grace ! the size !
Was ever stem so tall, so stout, so strong,
Exact in breadth, in just proportion long ;



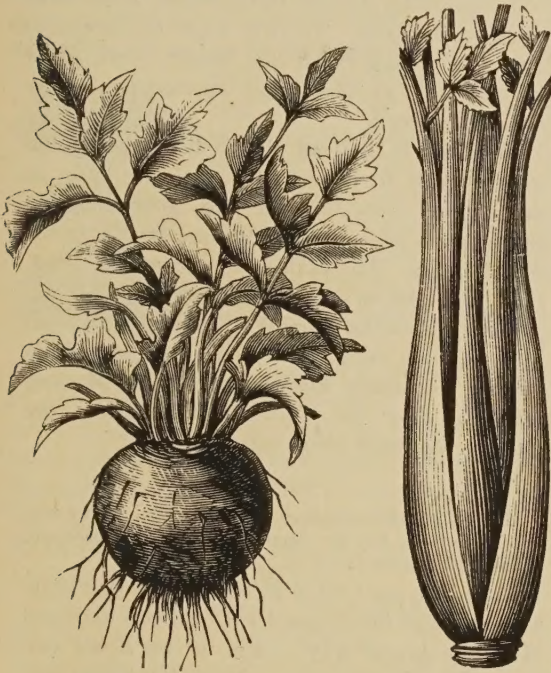
These brilliant hues are all distinct and clean,
No kindred tint, no blending streaks between ;
This is no shaded, run-off, pin-eyed thing,
A king of flowers, a flower for England's king :
I own my pride, and thank the favoring star,
Which sheds such beauty on my fair Bizarre."

Thus may the poor the cheap indulgence seize,
While the most wealthy pine and pray for ease ;
Content not always waits upon success,
And more may he enjoy who profits less.



CELERY GROWING.

Two requests we have before us for specific directions for GROWING GOOD CELERY, and STORING IT FOR WINTER USE, and perhaps we shall find no better time than the present for a few suggestions on this subject. We can have



TURNIP-ROOTED AND COMMON CELERY.

no good Celery without strong, "stocky" plants. Most of those offered for sale in cities and villages are grown so close together that they are slender, weak and worthless. It is best to raise them, if possible, and for this purpose a hot-bed should be started in March or April. Sow the seed in drills about an inch in depth and six inches apart. Water the beds about twice a week, give air, and when sunny, shade during the hottest part of the day. The plants must not be crowded in the drills, but have plenty of room for development. If a part are removed in thinning they may be transplanted into a cold-frame or another hot-bed, or even a warm place in the garden.

Early in July the plants will be fit for transplanting into the trenches, and we have often succeeded in growing them in the garden without the aid of glass, which were all that could be desired, by the latter part of June. Where no hot-bed can be had, make a nice, mellow bed in the garden, in as sheltered and warm a spot as possible.

The trenches should be dug two feet or more in depth, then filled to within a foot of the top with good soil and rotten manure in about equal proportions. This, of course, gives a foot of

good soil for the feeding roots. Here a great many fail, who forget that in making trenches all the good soil is removed, and a few inches of surface earth that may be thrown in will not furnish nutriment. Everything being in readiness, give the seed-bed a thorough soaking, and the plants can be removed without materially injuring the roots. Sort them so that all in one row will be about of equal height, as this is often of considerable advantage in after culture and earthing up. Disturb the roots as little as possible, and take off only any straggling leaf or bruised leaf-stalk. Round up the earth in the bottom of the trench, so that any earth washing from the sides will fall in the little alleys, and not smother the plants.

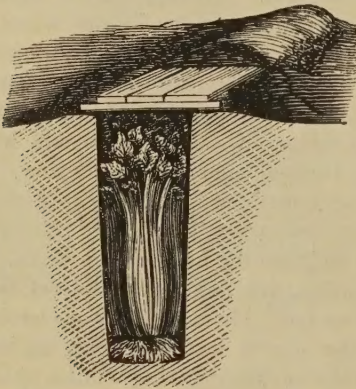
If the work thus far has been well done the plants will need but little more care until late in the autumn. Hoeing will be necessary to lighten the earth, or a soaking of water once or twice during the summer, in a dry time, but hoeing is better than watering. Do not earth up until October, but add a little earth occasionally when hoeing, as you would hoe earth up to a cabbage plant or hill of corn. Never touch or hoe Celery when damp with dew or rain, or on moist days; and always avoid getting soil into the heart of the plant. Make the trenches five feet apart, and set the plants about one foot. In September or October earth up to the lowest leaf, but cover no leaf. In two weeks another banking will be necessary.



BOSTON MARKET.

Before hard frosts Celery must be stored for winter, and this is an important matter, for it is easy to destroy a good crop by improper treatment. We will give two plans, either of which

is good, or, at least, has succeeded with us. Dig a trench about the width of a spade and a few inches deeper than the height of the Celery. The place selected must be high ground, where no water will be at the bottom, and where surface water will not drain into the trench. Take up the Celery with any dirt that adheres to the roots. Set the stalks close together, and close to the sides of the trench, but do not press them in. After the trench is filled, place pieces of board or scantling across it at intervals of five or six feet, one of these pieces being shown in the engraving. On these place boards five or six feet long, covering the entire trench. Then cover the boards with straw or leaves before very severe frost, but not until the ground is pretty well frozen, and keep adding as the cold increases. The work is then completed. When Celery is needed, take up a length of short boards, and



HOW TO STORE CELERY.

remove enough Celery to the cellar to last a few days, and place it in the coolest part, covered with earth. Replace the boards and covering as before.

Another way is to select a place on sloping ground, and this is best for either plan. Dig a trench two feet deep and one foot in width. Place the Celery plants in this trench, throwing in the earth and treading it firmly around the roots to a depth of about six inches. For the remainder of the distance throw in the earth lightly, so that when the trench is filled the tops of the leaves will be a few inches above the trench, on the surface of the ground. As many trenches as needed are made, about a foot apart. When the ground has frozen about three inches deep cover the bed with straw, and as the cold increases add more straw. Celery must be free from moisture when stored for winter, or it will be likely to rot.

Dig at any time, taking up enough for a week or so at a time. It can be kept in a cool place in damp sand; but a good way is to wash the

stalks entirely clean without cutting the roots, then stand them erect in a barrel and pour in cold water some three inches in depth, or more, so as to just cover the roots, and set the barrel where it will be as cold as possible without actually freezing. In this condition it will keep fresh for eight or ten days.

In handling Celery the greatest cleanliness must be observed. If dirty water is allowed to come in contact with the tender parts, great injury, both to plant and appearance, is the inevitable result.

What kinds shall we plant? is a question not very difficult to answer, for we now have so many good sorts that the old, poor ones are pretty much discarded. We are partial to the dwarf kinds. The pink and red sorts are beautiful, and just as good as the white. Our engraving shows the general appearance of a well grown Celery stalk, and of a dwarf branching variety, popularly known as Boston Market. We also show the Turnip-rooted variety, the bulbous root only being eatable.

MR. VICK:—I put Celery in trenches in the manner you described, but by January it was all decayed. What is the reason?—M. J., *Moon, Pa.*

Well, we put Celery in trenches in the same manner, and had it good until all was disposed of in the proper way. Let us see if we can account for the difference. When a plant or fruit arrives at maturity, the next natural process that awaits it is decay. This tendency is more or less perfectly checked by keeping the atmosphere almost at the freezing point, or even below it, when the nature of the article to be preserved will bear such low temperature. Celery must be kept at as low a temperature as it will bear, and it is generally best to make the trenches in an exposed position. The trench, too, must be drained, so as to carry off all water. The past winter was remarkably mild, and nothing kept well.

Celery planted early in the season, and blanched early, is not in a good condition for keeping, because the plant is fully matured, and under favorable circumstances would "go to seed" at once, but its unnatural condition preventing this it must decay. An immature plant is hardier, and will, under the unfavorable circumstances in which it is placed, make a good deal of growth and arrive at maturity in the trenches, which of course prolongs the keeping time. Seed growers know how hard it is to keep a good, mature, solid head of Cabbage, during the winter, while one that is half grown will come out of the trenches in the spring showing little signs of having passed through a hard winter.

THE CELOSIA.

THE CELOSIAS are an interesting family of brilliant Annuals, and when well-grown, from seed of good strain, will always please. Our warm summers are particularly adapted to this class of plants, and we have no difficulty in growing them to perfection in the open ground, while in cold and moist climates, like England



OLD COCKSCOMB.

and Scotland, a good deal of care and nursing is necessary to make good plants. Indeed the only good plants we ever saw in these countries were grown in pots or green-houses, though we presume they might be transferred to the garden during mid-summer, and do pretty well. A good many years ago we had the pleasure of attending a dinner party given by a Horticulturist of renown, to friends who were lovers of flowers, a kind of Horticultural reunion, and the central Floral Ornament of the dining table was an enormous Cockscomb, the stem so dwarfed and shortened that the comb covered and almost concealed the pot.

There are two desirable forms of the Celosia, the *Cockscomb* and the *Feathered*. Of the old Cockscomb, represented by the small engraving, seed can now be obtained that, with good culture in a rich soil, will give combs from six to twelve inches across the top, and on the fine prairie soils of the West we have seen them more than twice this size.

About six years ago we obtained a Cockscomb from Japan which far excels all others in the brilliancy of its color and the delicacy and beauty of the comb. The habit of the plant is shown in the engraving in the next column, while the cut below exhibits the usual form of the comb, the edges being ruffled like the most delicate



JAPAN COCKSCOMB FLOWER.

a new *Feathered Celosia*, which proved to be superior to any variety of this class that had come under our observation. It is not only exceedingly

beautiful and brilliant, but comes *true* from seed, a merit we can claim for very few of the Feathered Celosias. A score of times we have imported Celosias from Europe, that were highly commended by the best authorities, and one out of a hundred would prove good, and the ninety-and-nine worthless. Occasionally, too, we have selected seeds from a choice plant, in the hope that its good qualities would be re-produced, but in almost every case have reaped only disappointment for our pains. With our last trial we were agreeably disappointed; only an occasional specimen proved untrue. The plant is some two feet or more in height, somewhat branching, and bearing immense clusters of feathers, the color and form of which is shown in the colored plate; but we could present only one of the smaller heads. The leaves are purplish; but the colored plate will give a much better idea of this plant than words can do. It has been named *Superba plumosa*, or *Superb Feathered Celosia*.

The true Cockscombs are striking and singular in their appearance, and really grand when of good strains and well grown, but so peculiar in their form that they group with no other flowers, and seem to harmonize with none. No one would think of cutting those combs for a bouquet, or of even introducing a pot plant among a group of other plants.

The Pyramidal or Feathered Celosias are

graceful in their habit, and quite effective with other plants and flowers, especially foliage plants. The beautiful new one illustrated in our colored plate, with its elegant feathered sprays, that can be divided into the most minute sections without loss of beauty, will prove one of the most useful flowers the florist can possess. It is effective in masses, especially in large and gorgeous ornaments, and available even for the most delicate bouquets. Early in the season the plants seem weak, and make but little growth, but as the season becomes warmer a decided and rapid improvement takes place. The feather does not show its real beauty until August, when from that time until frost this Celosia makes the most brilliant and attractive bed in the garden.

PLANT OF JAPAN
COCKSCOMB.



THE UTILITY OF SOOT.

How disagreeable it is to be covered with soot, and what a quantity of the filthy stuff is yearly dumped into out of the way corners and holes. The writer has spent four-fifths of his life in and about gardens. During those years he has been compelled to fight insects—many of them very small, and others large—and this “nasty soot” has been one of his best aids in overcoming the myriads of insects that attack plants in a state of cultivation. He once lived on a place that lay on the edge of a marsh, or large tract of bog land, and such a location is always favorable for insects. Nothing in the way of Cabbages could be grown there successfully, without the aid of soot,—no densely crowded heads of snowy-white Cauliflowers would have graced the owner's table, if soot had not been freely used. All the stirring of the soil and manuring that could be done, would not avail to produce a fair crop. Soot was first sprinkled over the ground before the seeds were sown, then worked into the soil; and after the seedlings had made their second or proper leaves, advantage was taken of a dewy morning to cover them with a light sprinkling of soot. Then, when the young plants were transplanted they were dipped into a paint composed of equal parts of soot and soil, mixed up with water, or what is better still, soap-suds, until the whole was like thin paint. Into this handful of plants were placed so that they were covered up to their first leaves, and even partly covering them. After doing this there was little or no trouble in producing Cabbages, Cauliflowers, or any of their brothers,—such as Savoys, Brussels Sprouts, or the Curled Kale of Aberdeen—fit for any piece of humanity, from a prince to a beggar.

Soot is one of the best friends that a gardener or farmer has, and if he permits an ounce of it to be thrown away, he is casting away his own wealth. It will not kill the Wire-worm or annihilate troublesome insects, but it will make it very annoying for them to be compelled to eat through it before they can get at the nice, suc-

culent vegetables. If soot is first sown pretty thickly over the soil where Onions, Carrots and other root crops are to be grown, and then worked in so as not to come in contact with the seed when it is sown, there is no fear of losing a crop by the ravages of Maggots, Wire-worms and other pests. Here in western America we complain of insects, while we throw away that which would drive them to seek their food in some other place. The Roller fly or Moth comes regularly every May to disfigure our rose bushes, often making them appear as if they had been burned by a hot sun; when, if the bushes had been damped, and soot put on them in the first weeks in May, say once a week, the Roller fly would have been missing. Should any leaves have missed a coat of soot, look them over about five or six o'clock in the evening, and this insect may be easily seen on the top of the leaf where it has gone to feed during the night, while in the day time it lays quietly underneath to shade itself from the sun.

The farmers of England are great soot users, and it is no uncommon thing to see a whole train of soot leaving the towns, for the farms and gardens at a distance. The Turnip crop of England would be a failure each year, were it not for soot, and this is a very important crop in many districts. After they get into the second leaf the soot begins to fly, or if not a small fly takes possession of the young, tender leaves, and leaves the farmer nothing for his labors.

Soot is not only a good thing to drive away insects, but is also a powerful stimulant. The ammonia it contains readily mixes with whatever moisture comes in contact with it, and makes the plants feel good, so to speak. The Carbon and sulphurous gasses in it also add their share to the health of the plant. Therefore, kind friends, don't waste your soot; store it as you would gold, for it is quite as valuable in the economy of life.—AN OLD GARDENER.

Soot is a great power in the hands of the gardener, and when bituminous coal is used should be saved with care. But what are we to do who burn only hard coal, that leaves nothing worthy of the name of soot? For a top-dressing to an early Radish bed, a light sprinkling of soot is excellent, and even coal-ashes are beneficial.

GARDENING ON THE HOUSE-TOP.

From a gentleman of Boston we have received a description of a garden belonging to a lady friend, so peculiar in its location and character that we are quite sure it will be interesting to all our readers, and perhaps of benefit to some. A description of a garden in New Jersey, somewhat of this character, we published some time since.

AN ELEVATED GARDEN.

This garden is on the top of a five story building in the very heart of the city of Boston, occupying the entire roof, (except the sky-light for lighting the rooms below,) seventy-five feet long, twenty to twenty-five feet wide, surrounded by a corrugated iron fence four feet high, and a wire fence, or trellis work, on top of that, three feet high for the support of running plants, vines, &c. The roof is what we call a flat roof, covered with composition, on top of that planks are laid for walks, &c. Around the entire roof inside, next the fence and attached to it, are wooden boxes elevated from the roof, on standards about two feet high. The boxes are from fifteen to thirty-six inches wide, from twelve to fifteen inches deep, holes bored thickly in the bottom, covered with pot-sherds for good drainage, and circulation of air, and filled with rich loam. Besides these boxes around the outside, in the middle of the roof, and in every place where they will show to the best advantage, are various other boxes, tubs, stands, flower pots, &c., filled with plants. She has had this garden for two seasons; the first year was devoted more especially to a vegetable garden, raising successfully Watermelons, Cantelopes, Cucumbers in great abundance, Tomatoes and Lettuce, Peas, Radishes, &c. The past season was devoted more to flowers, with a few vegetables—Cucumbers, Lettuce and Peas in abundance. A row of Peas were sown around the outside of the boxes, next to the fence, taking very little room, covering the fence with beautiful green, making a good back-ground for the flowers to show. Sweet Peas were mixed with them, and these were beautiful. About fifty feet of the boxes were used for Geraniums. In that space she had about sixty plants, and they made a most splendid show all summer long. About twenty Roses, about the same number of Carnation Pinks, a box of Diadem Pinks, some very fine, and Pansies, Daisies, Balsams, Marigolds, Gladiolus, Heliotropes, Verbenas, Tuberoses, Japan Lilies, and several other varieties, Tropæolums, Clematis, Morning Glory, Phlox Drummondii, &c., Portulacas, the most splendid I have ever seen, blooming all summer long, in fact, everything seemed to do quite as well as on *terra*

firma, and it was said by those who saw them that hardly any one had such beautiful things as grew on the top of that house. For herbs there was Thyme, Peppermint, Spearmint, Catnep, Wormwood, Sage, &c. For watering, a large lead-lined tank, holding about five or six barrels, is used. It is elevated six or eight feet above the boxes, receiving its supply from the city pipes. This tank was kept filled by a float-valve, but the water stood in it for some hours before using that the temperature of the water might become about that of the air. The very hottest and driest days it might take two or three barrels of water, applied by means of a hose reaching from the tank to all parts of the building, to give them a thorough drenching, but it does not take as much water as one would naturally suppose. Then, in stormy weather, nature does the work herself far better than art can.

We found things raised here last year were about a month ahead of those on the ground, having no extra deep earth to warm, and up high and dry where the sun could have full force at them. Sheltered by the fence, watered just right, the way they grew was surprising, and I must say it did look like a little paradise in the "waste, howling wilderness" of brick walls, slate roofs and skylights.

If people only realized at what little expense, comparatively, they could have such a splendid place, in fact, the most beautiful summer resort, just on the top of their own houses, they would not be slow to improve the opportunity within the reach of nearly every one, and the wilderness above would literally blossom like the Rose, giving joy and gladness to many a weary heart.—J. A. W., *Boston, Mass.*

SOD VASE.

MR. VICK:—I made and put up on my lawn a sod vase, which I think is beautiful, and has been admired by all that have seen it. It is made in three pieces, and of heavy wire, No. 7 or 8. It is held firm by a post driven through the center, and is filled with sod and earth. They can be made for \$1.50 to \$2.00, according to size.

If you think this vase worthy of notice you may suggest the idea to your readers: I think it a good thing, and something new. There is no patent or royalty on it, and any person who can weave or plat wire can make it. It consists of bowl, stand and base.—H. H., *Moundsville, W. Va.*



PERENNIAL SENSITIVE PLANT.

Several years ago I planted seed of the annual tender Sensitive Plant, but obtained only one plant of an entirely new variety—a perfectly hardy perennial, which has stood out through four of our severest winters, unprotected. It is two to three feet high, very bushy, and of a light delicate green, like some of the finest ferns. It is more graceful and airy than any green-house Acacia I have ever seen. If it could be made to grow in the green-house it would be a valuable addition. It differs from the annual, also, in being bipinnate instead of pinnate, and



is far handsomer. The green-house man here, who was from PETER HENDERSON'S, says he has never heard of one in this country, and I have any number of different catalogues, and can find it in none of them. Last year, for the first time, it matured quite a quantity of seed, and as you describe so many new things, I thought I would write and see if you were acquainted with the plant, or if it was something entirely new. It makes a very elegant background to brilliant colored annuals. My plants came up back of a bed of double Portulacas, the delicate airy green making a lovely contrast with the brilliant colored flowers. It is as lovely in its way as *Paulina thalictrifolia*, and a greater acquisition than many, or most, of the newly introduced plants, being very valuable for its perfect hardiness. I send a leaf, which, not thinking to offer it, is not well pressed, it being difficult to do unless pains are taken, as they close so quickly.—MRS. F. M. COWLES, *Lansing, Mich.*

A PRAIRIE GARDEN.

MR. VICK :—We have here, on our prairies, a beautiful little flower which you have surely missed in your travels, or you would have thought it worthy a place in your collection and any princely garden. I see nothing in your books answering to its description. It is of dwarf habit, the flower being large in proportion to the plant, which is, perhaps, not more than six inches high, while the flower is nearly two inches long and an inch and a half across, being nearly the shape of *Whitlavia*, and of the richest and most intense blue imaginable. I call it *October Beauty*, because it blossoms late in October and first of November, when the prairie grass is "brown and sere."

I am a lover of flowers, but came to grief on the flower-beds, being a farmer's wife in a new country, and also a "weak sister." I could not weed the beds. I see you are a believer in beds of *Phlox*, etc. No doubt they are a delight and glory, but let me tell you, for the benefit of other weak women who love beauty (and you may "prent these notes," if you will) what I tried and succeeded with. I bought of you twenty-five cents' worth of *Blue Grass* seed, and made me a little lawn. It made quickly, for I believe every seed grew; and each year I purchase what Perennials I can afford, and spread wider my lawn, getting round it a few trees to protect it from our prairie winds, and it is already a thing of beauty, and a joy to ourselves and passers-by, some of whom begged for my beautiful crimson Dahlias last year. Alas, I had to give up the old home loves here, the Pansies, Daisies and Primroses of the native land! No; I won't give them up, though, when my trees are grown. But the Roses love Kansas, the gay scarlet Lilies make bright spots in the green grass, and lots of other beauties grow here, too.—MRS. H. B. M., *Vermillion, Kansas.*

A little good judgment and energy will accomplish almost anything. Here is a little lawn made at a cost of twenty-five cents and a little labor. Then, with the shade and shelter of trees, the lady hopes soon to have the Daisies and Pansies and Primroses—hopes that will never be fully realized, we fear. The prairie flower is the *Blue-fringed Gentian*. It is a true wild flower, and does not take readily to civilization.

GOURDS.—A correspondent, of Milford, N. H., has disliked to plant Gourds, fearing they would injure his own and neighbor's Squashes. The Gourds, Squashes and Pumpkins abound in pollen, and become "mixed" very readily. We have thought, however, that there is more danger to the Gourds than to the Pumpkins and Squashes. Then the seed only would be injured in case of hybridizing, and not the fruit.

CAULIFLOWER.

This delicious vegetable does not seem to succeed well in many sections of our country, especially in the older settled portions. Time was when it was produced in perfection in the market-gardens of New Jersey and at the west end of Long Island, but of late years it has been such an uncertain crop that the market-gardeners there have almost entirely abandoned its culture. About eight years ago gardeners who had removed from the western part of Long Island to the east end experimented with it, and were agreeably surprised to find it succeed far beyond their most sanguine expectations; and now it is a main crop with nearly every farmer in the town of Southold, and is largely grown elsewhere in Suffolk County.

The soil best adapted to its cultivation is a medium between sandy-loam and clay-loam, although very fine crops have been grown on land quite sandy, and also on heavy dry soils. Growers generally use land which has been for some years in sward, either mowing or pasture land, upon which a crop of corn has been grown the preceding year, or that sometimes has been used for two years cropping subsequent to the breaking of the sward. The ground is ploughed early in the spring and again immediately preceding the planting, and each time thoroughly harrowed and pulverized.

Various fertilizers are used,—barn-yard manure, fish or fish scrap, phosphates etc., but as a rule growers use about five hundred to eight hundred pounds of German Potash Salts to the acre, applied at the first plowing, and one thousand pounds of Peruvian Guano and one thousand to two thousand pounds of fine bone to the acre, well harrowed in at the second plowing.

The rows are marked out three and a half to four feet apart, and the plants set from three to four feet in the rows,—that is, transplanted from the seed-bed, in the same manner as Cabbages are. The seed is sown in drills, thinly, at any time between May 10th and June 10th, in moderately rich soil, and plants set out during July and first part of August. The varieties most in favor are the following, preference being given in the order named, (although experience has proven that any one or two sorts which do well one year, cannot always be depended upon the next, and instances are quite common where a variety grown two successive years from exactly the same seed, have given very opposite results—so that growers usually sow about three varieties,) Half Early Paris, or Nonpareil, Early Paris, Erfurt Extra Dwarf, Dwarf Erfurt, and Lenormand's Short Stemmed. Some have grown the Algiers and Autumn

Giant successfully. Early Snowball, and other new varieties, will be tested this year. After transplanting they are frequently cultivated and hoed, as success depends in a great measure upon thorough working to keep the soil free and loose, to encourage rapid growth. Nothing is gained by too early planting, as they will not make even the most ordinary heads during hot weather, but develop finely during the moist days and cool nights of October and November. The choicest grades of Early Erfurt, and sometimes the Early Paris, do well sown in a hot-bed in February, hardened off, and transplanted early in April, or as soon as the ground can be worked, and when the weather of June is not excessively hot and dry, give a good return during that month and the fore part of July; but grown in this way the crop is very uncertain. When the flower, or more properly the curd, begins to form, a few leaves are brought together and tied with a wisp of straw, or pinned with wooden pegs to shelter it from the sun. The exact time when the heads are fit to cut can only be determined by observation—experience soon teaches. They must not, however, be allowed to burst, and yet it is desirable to give them time to attain full size. Undoubtedly there are other sections of our country where the soil is new, especially near the great lakes and sea-board, where Cauliflower can be grown as successfully as upon "Long Island's sea-girt shores." At least, the fact that it has proved a very profitable crop here, will justify experiments elsewhere, certainly where the air and climate are influenced by large bodies of water, as is the case with us. I certainly advise every person who cultivates even the smallest garden, to grow at least a few heads of this truly delicious and delicate vegetable.—SUFFOLK.

SUCCESS.

MR. VICK :—I am delighted with my success at flower-culture. From one packet of Double Portulaca seed I raised one hundred and fifty-six plants. I think I must have got the prize paper. From one packet of Stock (Double Dwarf Flowering) I raised fifty-eight plants and only four single ones, the rest all double as a Rose; enough striped Petunias from one paper of seed for two large beds; and such Balsams, and Zinnias, Straw Flowers, Sweet Peas and Maurandya vines wonderful to behold.

My Tuberoses were started in the house, in small pots, and when transplanted to the garden I turned the pots over them. They bloomed long before frosts came. I grew enough Chinese Pinks and Pansies, from one paper of seed, for two good beds of each.—M. E. H., Grinnell, Iowa.

CULTIVATION OF WILD FLOWERS.

No one can fail to notice that a love for flowers and interest in their cultivation are making rapid advances all over our land. Florists pack plants in some miraculous way, so that they traverse the continent, and then come out fresh and bright. Seeds, which are germs of marvelous beauty, can be obtained for a trifle, and beautiful "Guides" give all needed instruction to insure success with them.

But it is not of rare exotics, nor of the flowers that florists have "improved" till they must feel that they have almost created them, that I wish to speak. I want to say a word for the wild flowers, the beautiful little children of Nature, that will soon people hill and dale, gladdening alike the familiar paths and the "silent wilderness" where no man passeth by. Almost every one admires them in their native haunts. Why not gather them round our homes and foster them with tender care?

More than thirty years ago I made my first flower bed in a little nook among the green hills of Vermont. There, among Pinks, China Asters and Marigolds, bloomed my little favorites from the hills and woods—Columbines, Hepaticas and Violets, pretty little snow-white Bloodroot, and gay little pink Spring Beauties. Since then, wherever my lot has been cast, I have gathered wild flowers about me. I have had my cherished house plants, my choice annuals, my gay Tulips in spring, and delicate Tuberoses in summer, my Roses, Lilies and Carnations, but these could not claim all my love and care. The favorites of my childhood were doubly dear when they smiled upon me from strange paths, and new beauties won my love and claimed my care.

I have found so much delight in this branch of Horticulture that I wish flower-lovers would look about them to see what treasures lie unheeded. Many kinds can be moved in early spring, and will flourish and bloom as if nothing had happened. Of these are the Columbines, Polemonium, Hepatica, some of the Phloxes and Anemones. Others do much better if moved in autumn when growth has ceased. Lilies and all bulbous-rooted plants are best moved after early frosts have killed the tops.

Some wild flowers accommodate themselves easily to almost any situation. Others require their natural conditions to be more closely copied. I never succeeded with Rue Anemone and Sanguinaria in Iowa, till I gave them the covering of leaves they were accustomed to. Some, like the Hepaticas, become double in cultivation. Almost all improve in some respect.

Dear flower sisters, are there not some among you who love the woods where the flowers

bloom, but whose feet are chained by sickness or many cares? Is there not some little nook, some secluded corner, where you may gather wild-wood treasures? If you have even an old hollow stump, it is a treasure. Fill it with earth, and plant in it some pretty wild vine. Set some bright woodland flowers and graceful Ferns among its roots, and leave it to the sun and showers for a time. Go and look at it again some day, and it will be a thing of beauty, and this beginning will be a nucleus round which you will gather other treasures. Shrubs, with bright flowers or berries, vines and flowers, and Ferns will accumulate, the birds, bees and butterflies will find your haunt, and when you are weary you will go there to rest.—MRS. FANNIE E. BRIGGS, *Wash. Terr.*

THE TREATMENT OF PRIMULAS.

You now have a most suitable medium for your subscribers to exchange the fruits of experience and sentiments on gardening, and they ought to avail themselves of the opportunity. Has any of your subscribers ever tried the Lily of the Valley as a decorative plant for the winter months? It is certainly a valuable acquisition, and would very materially add to the attraction of the collection. The cheering green leaf renders it almost indispensable, to say nothing of the sweet and delicate flower which casts a lustre around it.

I must tell you of the splendid success I have had with my Primulas, *alba plena* and *Kermesina plena*. They have been decked with a profusion of bloom all winter and thus far in the spring, nor does the health of the plant seem impaired, or the floriferousness of the same diminished. I shall give you my *modus operandi* for the benefit of others. A year ago, about the middle of March, I sowed the seeds in a mild hot-bed, and in ten days time they were up. When large enough to transplant, I potted them into three inch flower pots, and when this soil was permeated with roots I transferred to five inch pots, taking care not to break the ball of earth, and giving good drainage. I then plunged them in a cold frame, partially shaded, and with careful watering they grew rapidly and to an enormous size, but would occasionally show blooms, which I nipped off, thus saving more floriferous strength for the disconsolate days of winter. In October they commenced blooming, and which they have unremittingly kept up. When they got pot-bound, I watered at intervals with liquid stable manure, which kept them thrifty. My compost for these consisted of equal parts of sand, leaf mould, fibrous loam and well decomposed cow manure.—J. W., *Hot Springs, Ark.*

FLOWER CULTURE IN IOWA.

MR. VICK :—Of late years I never sow any but the most hardy seeds in the open ground, and find that almost every thing *can* be transplanted, even to Poppies and Larkspurs. I have not had very good luck with the Auratum Lily, but mean to try once more; but with the White Water Lily I have done splendidly. Four years ago I procured some from the river, the 15th day of April I put them in a tub suitably prepared, and the 10th of June they were in bloom, and blossomed again in September. I have had them every year since. Please tell me if there is a double yellow Water Lily. I am told there is, but have never seen one. I must tell you of some of my luck in the way of flowers. Three years ago I purchased, among other seeds, a paper of Asters, and one plant reached a height of four feet; the topmost flower measured five inches across; three branches were two feet long; it had forty-three blossoms, the end or topmost flower of each branch being from three to four inches across. It stood erect without tying. Only for the color, a delicate lavender, and the form of the leaves, I should have been content to let my friends call it (as many of them did,) a new kind of sunflower.

Last year I planted a paper of Canna, or Indian Shot, after soaking the seed forty-eight hours in warm camphor water. About the middle of April, I think it was, they came up,—at any rate, in less than a week after planting; the last of May I transplanted them, and the middle of August they were in bloom; I ripened seed from three varieties. Do you think the camphor assisted in sprouting, or would warm water have done just as well without it? I kept them pretty warm while soaking. Two years ago I had, amongst other seeds, sent me from the "Government Seed Shop," a paper of what proved an Amaranth, or Prince's Feather. The leaves were very pretty, being green, red, yellow and bronze. It was not more than three feet tall the first year, but a seed happening to come up last spring in my rose bed, I let it remain, when it shot up to the height of five feet and ten inches, with branches excelling the first year's growth in length. It was really gorgeous. I haven't a doubt but it would have accomplished a foot or two more, but an aspiring Wistaria that had been jealous of it all summer improved its opportunity one windy day, and enfolded it in one of its numerous branches, but it soon repented of its folly, for the poor thing was a dead weight on its hands, and both came down together in a week or two. I have taken over twenty dollars in premiums on my flowers at our County Fairs. Have always taken the first premium on Dahlias until last year, and

then there was a splendid assortment from the north part of the county that came in ahead of me. I never saw as nice a collection, with the exception of yours at the State Fair three years last fall. Three years ago I exhibited over two hundred kinds of cut flowers, which I placed in wet sand in shallow boxes, but the premium was awarded on a basket of flowers, only sixty kinds, arranged in moss. It was very pretty, but the beauty of arrangement was what took the premium and not the number of specimens as advertised; but the committee thought it was not right to give so many premiums to one person, not even if they did deserve it, and I guess they were right.—L. A. F., *Independence, Iowa*.

There are *double yellow* Water Lilies,—that is, with several rows of petals, like the White Water Lilies. It is believed a solution of Camphor is of great service in promoting the germination of seed.

FROM AN EDITOR'S LADY.

MR. VICK :—Let me, as the wife of an editor, express the obligations I regard myself under to you for the many favors received at your hands, and in doing so feel that I echo the wishes of the wives and daughters of the press generally. I would like, had I the space and you the time to read, to give you an account of my splendid success with your seeds for the last nine years. The Pansy is my favorite over all other plants, and last year I had one that was double and of beautiful purple. I believe there is an affinity between flowers and lovers of flowers. My husband loves flowers, and he has fashioned our sitting-room window after a model in your autumn catalogue, and we now have over two hundred plants. Of course it is over crowded, but looks beautiful. "That husband of mine" finds it a nice recreation to leave the dull click of the types and bask in this dream of beauty. I have several questions I would like you to answer in the MAGAZINE, at your convenience, for the benefit of some of my friends as well as myself. I have a Tree Carnation, from seed of yours, which is three years old, and has never bloomed. It is a mammoth one, being over two feet high, and has been treated as a tender green-house plant: what must I do for it? I also have some bean seed, a present from the wife of a Californian editor, known to her only as the Australian Bean. It has an abundance of dark green foliage, blooms the second year, has spikes of beautiful white flowers, and is very tender. I enclose some of the seed, also a leaf from mine, which is now growing in my window, and doing finely. Please name it for us.—MRS. A. R., *Centralia, Mo.*

The bean we will grow, and try to ascertain its name. The Carnation must be growing too luxuriantly, we think. Place the plant in a rather small pot, and prune both roots and top, and see if it will not flower.

PERENNIAL WHITE PEA.

Some of your correspondents do not succeed in growing Everlasting Peas. If my experience will be of service to any of your readers, they are perfectly welcome to it, as it would be a great disappointment to me to grow any plants and not have it bloom.

Take a deep box having holes large enough for perfect drainage, which cover with pieces of broken crock, and over it throw one inch in depth of good garden mould, then two inches of well rotted cow manure. Mix up well one-fourth part of good garden soil and leaf-mould, one cup of sand, and one half quantity of charcoal, well powdered; throw into the box and dampen gently with warm water until even with the top of the box. It should be eight or ten inches in depth, so that the roots of the Peas may not touch the manure and be rotted off,—being tap rooted they run very deep.

Having soaked the peas in warm water two hours, make holes one inch in depth and four apart, and sow them. Cover, and press down well, sprinkle, and cover with any old rug or papers to keep damp, and let them stand three days. If sown in the spring, place the box out of doors under a shrub or tree, where only the morning sun will get at it, and be sure to keep them damp. When in the house place them at the window in a cool room, and give, if possible, only the morning sun in winter, and plenty of fresh air. I find they cannot endure our winters out of doors the first year. After they have four leaves work the earth well between them. Those sown in the fall can be set where they are wanted to grow; in the spring dig the earth deep for them, work in manure, leaf mould, sand and charcoal; set the plants, cover well, and mulch lightly with old grass or leaves. Once a month, if very dry, throw off the mulch and two inches of earth, work up the soil well, water thoroughly, leaving the water to settle; then cover with the dry earth just taken off, and mulch again lightly. Cut out all shoots but eight or ten, and these will grow ten or twelve feet. Have strings for the tendrils to cling to, running to that height on the trellis.

I never expect anything of these Peas the first year, for after all this care for six months, they are miserable, spindly things; but after being pinched back, and watched, and tended, they will then pay you by their beautiful bloom for the tediousness of these directions,—blooming constantly well into November. Select the best or most perfect bloom as early as possible, for seed, and tie a colored thread to it. Cut off all other blooms as they wither, and I will guarantee their blooming.—M. E. E., *Kirkwood, Missouri*.

SWISS CHARD.

I do not think your readers are aware of the nature of *Swiss Chard*. I know my neighbors are not, and having made what I consider an important discovery, I desire to impart the knowledge to everybody, especially to those who live in northern latitudes, and are troubled to obtain early vegetables for the table. Having in the summer of 1876 grown more CHARD than needed,—and we use a good deal, for I consider those fleshy leaf-stalks simply delicious



—some of the plants passed through the summer without losing many of their leaves. In the spring of 1877 I was surprised to find that those plants that had not been closely packed during the summer had survived the winter, and were about the first things in the garden to show the return of spring. Very soon their broad leaves with their fleshy mid-ribs were above the ground, and furnished the most delicious early dishes for the table that I know anything about. Last summer I planted a bed especially for spring use, and now, (March 24,) I see they are just showing life and activity. There was not a plant lost by the winter. I suppose we might naturally expect a Swiss production to be pretty hardy, but I had not the least idea before this experience that a Beet of any kind would survive the winter. I think this information will be valuable to the readers of your MAGAZINE.—S., *Dansville, N. Y.*

MR. VICK:—I feel greatly indebted to you for teaching me how to raise flowers successfully. I used to meet with many discouraging failures; but times have changed. My friends praise my flowers now, instead of accusing me of throwing money away. With a MONTHLY to help me along, I hope to be still more successful.—M. K. P., *Wadena, Minn.*

A BEAUTIFUL FLOWER.

MR. JAMES VICK :—I have a rare and beautiful flower, without a name, and write to you for information. In the month of May, many years ago, I was wandering among the cliffs on the head waters of Silver Creek, Ky., and came upon a single specimen of this flower. Hundreds of flowers covered these cliffs, but this one alone struck my boyish fancy. I dug around it, and carried it, dirt and all, to my mother, who is a



dear lover of flowers. That was over twenty years ago. I left home before it bloomed again, and wandered in many places, finally settling at this place. During all this time, mother has nursed that wild flower not alone for its beauty, but because it was my

favorite. A few years ago she sent me a portion of the roots; it did well, and is very much admired by those who have seen it. The root is like the root of the Cowslip, the flower like the Cyclamen. It sends up a flower stem the same as the Cyclamen, but on this stem, instead of one bloom, it sends out six or eight, pure white, with ears thrown back, and bright yellow nose or center, instead of red or purple as in the Cyclamen. The root in my possession sends up five or six flower stems, and blooms in this climate the last of April. The first impression on looking at them is that they are laughing at you. My wife calls it Charity; my little daughter calls them Rabbit's Ears, and I call on you for the proper name.—E. S. S., *Knoxville*.

This is the American Cowslip, *Dodecatheon Meadia*.

THE CATALPA.

The Catalpa is a beautiful native tree, bearing its panicles of large white flowers in July. The leaves are very large. It is not found wild north of Philadelphia, and, in fact, is a little tender in the North when young, but after a year or two succeeds well. We have a few fine old specimens in this city. We fear it would not succeed in north Wisconsin, where our correspondent, A. J., desires to plant this tree.

The following on this subject from Prof. F. J. BURRILL, of the Illinois Industrial University, will be interesting :—"From the experiments so far at the Illinois Industrial University, the Catalpa is one of the cheapest, and easiest to grow, and one of the most rapidly growing of our forest trees, native or introduced. In one plantation, containing about twenty selected species, only the Soft Maple and White Willow have in eight years surpassed it. It has out-

grown the White or American Elm, White Ash, European Larch, Osage Orange, Black Walnut, &c., upon the same ground, and under the same treatment. It is not attacked by any insect, nor does it appear to be subject to any disease whatever. Our trees were raised from seed planted in the spring of 1860, and were transplanted in 1871. When reset the tops were cut to the ground, because they were crooked and much branched, and were set two feet by four feet to induce erect growth, cultivated like corn three years, and plowed once each of the two following years, since which time nothing has been done to them except a very little pruning. Next spring every other row will be removed and used for stakes in vineyards, fences, &c.

"The average height is now sixteen feet three inches, and average diameter one foot from the ground three inches, some much larger. They are as straight and erect as can be desired, and grew in 1877 an average of thirty-three inches.

"While collecting specimens of the trees of Illinois for the Centennial I found some boards sawed from a log two feet in diameter which was proven to have laid upon the ground one hundred years. One man had known the log to have thus lain during forty years of this time, and he had the information directly from another as to the previous sixty years. This was in the extreme southern portion of Illinois, about twelve miles from Cairo and the Mississippi bottoms. The wood is still sound and strong, and susceptible of a fair polish."

DESTRUCTION OF PLANT INSECTS.

I have been so successful in ridding my plants of insects that I am tempted to tell you what, perhaps, you already know. Through the early part of winter my plants were feeble, and when the sun began to grow hot in January, multitudes of insects were quickened into life, and destroyed them in part; I expected to lose all, when I thought of the way in which bird cages are got rid of these pests. I placed the tallest plants in the middle of the stand, and into them stuck four or five thin sticks, about eight or nine inches taller than the plants; at evening an old sheet was thrown over the whole, so that the edges of the sheet was in contact with the outer row of pots. Early in the morning, before the fires were started or the sun shone, the sheet was quickly removed and gathered up, so that none of the captives could spin down, creep out, or fly away; the quantity and variety of insects secured was surprising, taken out into the cold frosty air they were easily shaken off on to the snow. This experiment repeated five or six times cleared my plants of vermin completely.—S. A. P., *Brunswick, Me.*



NOTES ON THE HYACINTH.

The last week in March is the time when this beautiful spring flower is placed before the public at the exhibitions in London, and a week later further north. If the present mild weather continues, it will be difficult to keep the flowers in good condition up to the time they are required. To do the Hyacinth well a little warmth is necessary. I generally place the pots in a house where the night temperature is from 55° to 60° , and set the plants as close to the glass as they can conveniently be placed. The spikes come up stronger and the bells are more perfectly developed under such treatment; it will not answer to allow the plants to remain in this heat after half the bells are opened. They must be removed to the greenhouse, and placed in a light position, but not exposed to high winds, as the leaves are very brittle and easily damaged. The skill of the grower of exhibition Hyacinths is evidenced by bringing his flowers to the show and staging them with the leaves rigid and standing out from the base of the plant, nor should they rise much higher than the lower bells. A large proportion of the plants exhibited in previous years have shown unmistakable signs either of careless shading or ventilating, the leaves have been limp and hanging over the pots, or in some cases tied about the middle with a string, the leaves drooping in a most undignified manner over their support. To avoid this let the plants be as near the glass as possible; admit air on every favorable occasion, even leaving a little on at nights, and do not shade unless the sun is likely to be hurtful to the plants. Success does not entirely depend upon growing the plants well, the leaves and flowers are very easily injured, and the plants must be taken to the place of exhibition without injury. The plants must be neatly set up in eight-inch pots, and the surface of the soil be covered with nice green moss; further, the bells should be regularly arranged — Nature must be assisted by Art to the extent of placing the bells in a position that their mouths are on a level with the insertion of the stem, but no artificial support is permitted, no small pins stuck through

the bells, no ligatures of invisible silk threads. Much also depends on the arrangement of the colors; it is quite necessary that there should be as much variety of color as can be obtained, though quality must not be lost sight of for this. My own plan is to stage the collection at home exactly as I mean to arrange them at the show, and when this has been done to give entire satisfaction, the plants are prepared for traveling. I wrap each spike up separately in tissue-paper with the leaves, the plants are then packed as close together as possible in the van with just a little straw between each pot. The spikes will require to be touched up just a little on the morning of the show, and if the exhibitor has the previous arrangement in his mind's eye it will not take long to set them up, and if the leaves are rigid and stand up boldly it will be some points in favor of the collection. Tulips are easy to manage; it is necessary to place a stick to each flower, and this should be long enough to reach the whole length of the stalks. Each flower must also be tied round with a strip of matting to keep the petals together. The leaves are not tied in any way, and it is necessary to be careful with them when moving the plants, and also in packing them in the van. The leaves are quite as easily injured as those of the Hyacinths. The matting should be removed from the flowers the last thing, and not until all the other plants are staged. Polyanthus Narcissus should always be included in a spring show with Hyacinths and Tulips. They make a very distinct feature, and are more easily grown and staged than either Hyacinths or Tulips. The flower-stalks are merely supported with sticks, and a strip of matting should be tied round the leaves to prevent damage in transit. —J. DOUGLAS, in *Gardeners' Chronicle*.

FLOWER TEA. — An infusion of the dried blossoms of the common Cowslip is drunk in some counties in England under the name of Cowslip tea. The blossoms communicate an aromatic fragrance to home-made wines, resembling that of the Muscatel wines of the South of France.

DEATH OF JOHN KEYNES.

The English journals announce the death of JOHN KEYNES, one of the most successful and honored of English Florists, which occurred at Salisbury, on the 17th of February, at the age of seventy-two years. Mr. KEYNES had been a prominent cultivator and exhibitor at the Horticultural Shows for more than half a century, and in 1872 was entertained at a complimentary dinner by the Horticultural Club, in celebration of his having attained the 51st year of his career as an exhibitor. The *Floral Magazine* says — "Originally employed in the brush trade in his native town of Salisbury, he, quite early in life, manifested a great love for florists' flowers, and especially the Pinks (perhaps the earliest object of his affections,) and he was wont to relate how he pawned his watch when little more than a lad, in order to have the means of purchasing a fine new variety. Eventually he went into business as a florist, and made a great reputation, growing Carnations and Picotees, Pinks, Dahlias, Roses, etc., with great success. It is with the production of new Dahlias in particular that his name stands forth so prominently as a florist; and the many new varieties he was able to exhibit in 1878 represented, to use his own words, 'the finest lot of Dahlias he had ever raised.' On November 9th, 1876, Mr. KEYNES was elected Mayor of Salisbury, and served his native town with credit and fidelity during his year of office. When he laid down his municipal honors in the month of November, failing health had begun to manifest itself, and three months after he passed peacefully away.

'How well he fell asleep!
Like some great river winding to the Sea.
Calmly and grandly, silently and deep,
Life joined Eternity.' "

For many years we have been in the habit of looking for and importing the new Dahlias of Mr. KEYNES, and, with all the world, we feel this loss.

POTATO NOTES.

The Potato is the most irrepressible and the most rejuvenescent of garden plants. The elder COBBETT raved about it, and gave it his emphatic curse; Archdeacon DENISON has added to that all the force of priestly denunciation; writers of all kinds have decried it, the disease has time after time for the past thirty years attempted to decimate it, and now it has just been attempted to frighten it to death by the great beetle scare; but out of all these dangers and perils it comes triumphant, it is now with another approaching planting season rising from its fungoid ashes like the famed Phoenix, and live again it will to spite detractors and falsify all their prognostications. The Potato is not

only the most generally consumed but it is also the most popular of all garden esculents; gradually it has grown up from being a table luxury to a most important place as a national article of food, and now Potatoes will be had by all classes even though, as now, called upon to pay nearly double the ordinary price for them. The private gardener grows Potatoes by the hundred rods, the grower for the million by the hundred acres, nay, if we could but have an accurate statement of the acreage of Potatoes in Great Britain for one season, we should not only then be enabled to obtain some idea of the amount of capital invested in the production of the crop, but also some knowledge of the loss that must fall upon the growers as a body when, through the disease, at least one-half the crop is rendered valueless. With all our acres of Potatoes, however, we are far from being independent of the foreigner, who, with cheaper land and labor, can compete favorably in our own markets, and annually sends us for consumption bushels that are almost innumerable. That there is any prospect of the Potato failing as a crop at any time is improbable. — D., in *Gardeners' Chron.*

CULTIVATION OF PALMS.

Dr. SEELIG gave a lecture a short time ago at Kiel on the cultivation of Palms in dwelling rooms, which is reported in the *Deutsche Gartner-Zeitung*, and which contains some very good hints on the potting, selection, &c., of Palms for window gardening. The soil he recommends is a rich leaf-mold, not too highly decomposed, with a little sand and coal dust for quite young plants. For older plants an admixture of one-quarter or one-third of rich garden mold; and if the roots are weakly or unhealthy it is advisable to add some broken charcoal. Great care must be taken in repotting not to break any of the large fleshy roots, and to fill up well between them with the mold. Water should be withheld until the ball is tolerably dry, and then applied freely. We may add that this rule in watering must invariably be observed to obtain healthy plants, though some subjects will withstand a greater amount, or continued ill-treatment, better than others. To cleanse young Palms from insects a very soft brush is the best instrument. Dipping in, or washing with, strong soapy water is a hazardous proceeding; many species cannot bear it, as it causes them to lose their leaves or it kills them outright. The strongest wash that can be used with safety is a very highly diluted solution of an insecticide, and even then it is better to rinse the leaves some hours after with pure water. Palms do not require a continuous strong light, and direct exposure to the sun's rays often injures them.

CHILDREN'S FLOWER SHOWS.

The leading thought of the present number seems to be the best way to encourage the culture of flowers, especially among the young, so we might as well exhibit something of what is doing in this direction in other countries. We now show what was done at a Children's Flower Show in England:—"In the gardens of Grosvenor House, on Monday afternoon, a 'Children's Flower Show' was held, under the kindly superintendence of the Duke of Westminster, and the youthful competitors received their prizes from the hands of the Duchess herself. At four o'clock the show opened, and the flowers had then been arranged under a large tent erected to the right of the lawn, all the judging being then over and the prize winners declared. From four o'clock till six o'clock the visitors enjoyed the cool of the ample lawn. At six o'clock the Duchess of Westminster distributed the prizes, all of money, with an injunction (not unneeded, it might have been thought, considering the diminutive size of some of the small competitors) to be sure and 'not lose it.' Between thirty and forty children, the oldest apparently not more than fifteen years, received prizes, and when that part of the ceremony was over, the Earl of Shaftesbury addressed the visitors. He hoped the visitors had seen that day sufficient to show them that they should encourage in children a taste for flowers. He had seen himself in the east and central parts of London, where children were surrounded by every bad influence of moral degradation, dirt, and squalor, the refining influence of flowers on the sight, the mind, and the heart that followed on encouragement. He hoped that those who had witnessed the result of that day would do their best to encourage flower gardening among the poor. It was his experience that it taught the children of the poor the best of lessons, for they watched the flower from seed to blossom, and learnt the beneficence of a great and unseen Power. It taught them the great truth uttered by BACON in one of his essays, 'GOD Himself planted the first garden,' and he added that 'a garden was one of GOD's blessings.' The rich had it in their power to benefit in mind and soul the poorest, lowest and least moral of the great mass of this country. He hoped they, the visitors, would remember this, and make it a rule to impress upon them that there were 'lessons in flowers, sermons in stones and babbling brooks, and GOD in everything.' "

THE MARSH MALLOW is cultivated in certain districts of England and held in repute as a medicinal plant, being used chiefly in fomentations and gargles.

COTTAGERS' SHOWS.

In a London Journal we find the following remarks by a correspondent on the culture of Vegetables and Flowers by Cottagers, which means the farm laborers or humble artisan and their wives and children:—"Our annual autumn show of cottage garden produce has just been held, and, after a trying season for vegetable culture, it was very gratifying to the promoters to find that there was no falling off in the quantity or quality of the specimens brought for exhibition. The general opinion previous to the Show was that the size of root crops—such as Potatoes, Onions, Parsnips and Carrots—would not equal that of former years; but not only was the maximum size fully reached, but the average quality was far above that of ordinary seasons—in fact, almost every specimen brought for exhibition was without blemish. This is due to the many opportunities afforded to cottagers generally by the increase in the number of local exhibitions throughout the country; and, although the prizes awarded to cottagers may not be of any great pecuniary value, or the objects exhibited require any great skill to cultivate, it is surprising what an amount of interest centers in these humble competitions; and doubtless they are most excellent institutions for the encouragement of thrifty, industrious habits (thereby securing manly independence,) in preference to indiscriminate and ill-judged charity. Those cottagers who have little or no garden direct their energies to the cultivation of window plants, and a really creditable collection is usually staged in competition for the prizes offered. Bouquets and baskets of cut flowers attract more competitors every year, while the cultivation of hardy fruits has been largely increased by the distribution of young trees of good free-bearing kinds as presents or at wholesale prices. Many a cottage wall is now vastly improved in appearance by a luxuriant Apricot, Pear or Plum tree being trained on it, besides being a most acceptable addition to the revenue of the tenant."

IN CHINA many odoriferous flowers are much used in scenting teas. The best kinds of Caper or Sonchy teas are said to be scented more or less with the curious green flowers of the Chulan (*Chloranthus inconspicuus*, Swartz,) although Fortune states that those of the *Aglaia odorata*, Lour., are used.

THE flowers of the well known Marigold (*Calendula officinalis*) were formerly used in soups and broth and as a carminative, but they are now chiefly employed to adulterate saffron.



FLOWERS IN WASHINGTON TERRITORY.

MR. JAMES VICK:—*Dear Sir:*—As you have invited correspondence from all sections of the country on the culture of flowers, I thought a few words from the north-western part of the United States might not be amiss, and first I would like to ask a few questions.

1st. What climate is necessary to make Pæonies flower? I have one (*Fragrans*) that has been out three years, and has never produced either buds or blossoms. Our climate is similar to that of England, in fact people that have resided in both places say there is very little difference.

2d. Does the Balsam require a hot climate to come to perfection? I have never succeeded with them.

3d. Can *Amaryllis* bulbs be kept out of the pots during the winter season? Mine decayed; perhaps I kept it too moist.

I have succeeded splendidly with *Asters*, *Petunia*, *Portulaca*, *Phlox*, *Stock*, *Verbena*, *Larkspurs*, *Pansies*, *Antirrhinum*, and, in fact, all of the hardy annuals. My *Petunia* plants were four feet in diameter, Sweet *Alyssum* two feet, *Verbenas* three feet. I grew the New *Victoria Aster* nearly five inches across, and perfectly double. I have an *Oleander*, grown from seed received of you, which is just budding, but the blossoms are developing very slowly and the plant is growing beyond them, like the one owned by the lady mentioned in the first number of the *MAGAZINE*. I would recommend those who grow flowers in the house to try the *Calceolaria*; it is of the easiest culture, and has abundance of elegant flowers. My Italian Onions, New Giant *Rocca* of Naples, grew to an enormous size, some of them weighing three pounds.—G. E. H., *Skagit, Whatcom Co., Washington Territory*.

1. The Pæony flowers well in England, and if your climate is any way similar we know of no reason why it should not blossom with you. In very warm climates the buds seem to scald and do not often open well.

2. The Balsam succeeds best in a warm climate. You should grow the plants in pots and set them in the open ground when the weather becomes warm, but a climate that will grow such Italian Onions as you describe should not be unfavorable to the Balsam.

3. *Amaryllis formosissima* may be kept dry all the winter, like *Gladiolus*. *A. Johnsonii*, after flowering, should be kept growing until the leaves ripen and die, and then may be kept dry in the pot until spring. *A. Valotta purpurea* should grow moderately during the winter; keep in a pretty cool place, and water but little.

FLOWER GARDENING IN MAINE.

I want to tell you a little of my experience with flowers. Three years ago I sent to you for some flower seeds, telling you that I knew but little about the culture of flowers, but was one of the thousands you spoke of that were thirsting after knowledge. It seems as if I could now fill volumes telling you the pleasure that I have experienced since then, taking care of my flowers. My husband is as interested in their culture as I am, and perhaps more. The next year after obtaining my first seeds, my husband made our flower garden double the size it was at first, and that is now too small to suit his ambition.

I have had splendid success with everything that I have planted. It would be in vain to attempt to tell you all my favorite flowers, for I should find myself mentioning every one that I cultivate in the garden, so I will only mention a few. *Browallia*, for its peculiarly shaped flowers; *Canna*, for its stately appearance; *Eutoca*, *Lobelia*, *Myosotis*, *Whitlavia*, *Pansy* and *Gypsophila*, for their really modest appearance. Their beautiful little flowers are my especial favorites. *Phlox Drummondii* I am delighted with. A lady friend counted twenty-four different markings of *Phlox* in my garden, last year.

I must leave my summer garden and tell you a little of my winter garden, which seems to give me the most real pleasure of the two. In the sitting-room there are two windows, entirely devoted to the accommodation of my plants. By the aid of double windows and a few extra sticks of wood at night, we have had no trouble with our plants.—Mrs. C. A. B., *South Paris, Maine*.

HARDINESS OF CLEMATIS JACKMANII.—A plant of *Clematis Jackmanii* in the yard of ABNER WAKELEE, Esq., of this city, which has borne a full exposure to the weather the past winter without protection, came out this spring uninjured to the height of nine feet. Only the extremities of the shoots for about two feet were winter-killed.

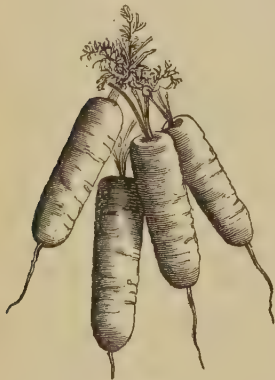
CORELESS CARROTS.

MR. VICK :—I have read of Carrots that had no heart or core, but never saw them. Are they any better than the old kind?—M. S.

There are varieties of Carrots called *Coreless*, in which the division is not so marked as in the



common sorts, but having tested every kind on our own grounds, we have not found any in which the heart was not plainly distinguishable, and in which the separation was not easily



made. Indeed, most of the new and better sorts of Carrots have thicker outside flesh, and a more tender heart than the older kinds. We give engravings of two of the varieties claiming this peculiarity. The larger one, the *Long Red Coreless* we have

had on trial some time, and the small one, the *Half-long Scarlet Carentan*, was introduced by us several years ago. They are both good kinds, and well worthy of culture.

UNPLEASANT EFFECTS.—The colored pictures in your MAGAZINE I find one fault with. They stir up inherent longings for the original flowers, longings that some of your subscribers are trying to put to sleep.—MISS E. C. B., Clayton, N. Y.

PLANTS IN LIVING ROOMS.

We have had a case here of which I do not think there has been a parallel since the cultivation of house plants has become so general as it is now. A lady friend of mine, a great lover of plants, had her house stocked with many very large and beautiful plants. Among them were the Oleander, the Abutilon, Calla, Begonias, Lilies, Geraniums, Fuchsias, Roses, and many other kinds, making her sitting-room look like a miniature green-house. In the early part of winter the lady was taken sick with what the doctor calls erysipelas, and he said it was caused by the house plants and advised her to throw them away, which she did—some thirty or more plants. Some of the neighbors followed suit, and pitched their Oleanders out of doors, in mid-winter, to take care of themselves. Is it usual for those who are in the habit of being almost constantly in a green-house to be affected with sickness of some kind? I think not, but your experience is more to be relied upon than my judgment. I keep a stand of plants at the head of my bed all of the time and suffer no inconvenience. Such a circumstance as this will have the effect to prevent some from keeping house plants, and thus deprive them of the pleasure to be derived from these beautiful things.—MRS. J. W. W., Waverly, Iowa.

This is a case of burning witches—it recalls the events of the Salem witchcraft of the seventeenth century. For the sake of the "Schools," we hope the "*Doctor*" cannot exhibit a parchment with his own proud name inscribed as *Medicina Doctor*,—such quackery is common enough without being backed up by authority. This idea that plants in the house are injurious was in the first place a supposed theoretical deduction, but as baseless as that twice four are two, because twice two are four. It never had a single fact in its support; on the contrary, it was patent that all facts opposed it; yet, such is the tenacity of error, notwithstanding all that has been written upon this subject to show the falsity of the assumption, it has clung to the popular mind, and, there is some reason to believe, has been countenanced by savans. In our last number the results of the latest scientific inquiry on this subject was given, and it is to be hoped it may have the effect, to some extent, of dispelling this absurd notion.

HARDINESS OF LILIES.—CHAS. E. BROWN, of Yarmouth, Nova Scotia, writes: "Lilies are my favorites, and I have many varieties. All are perfectly hardy here—the Auratum one of the most successful and most easily multiplied,—much more so, in my experience, than Punctatum or Japonicum album."

CHINESE LILY.—MR. VICK :—I am glad that you notice in your MAGAZINE the "Sacred Chinese Lily," and give its true name. Four years ago a friend, in Santa Barbara, Cal., showed me one, and I was satisfied it was the Polyanthus Narcissus, such as you had sent me long before.—MRS. D. T. P., Augusta, Me.

FIFTY YEARS AGO.

MR. VICK :—*Sir* :—When I was six years old, my parents lived near Jamestown, Chautauqua Co., N. Y., and having a passion for flowers I teased until they allowed me six feet of ground for my own use. When I commenced, my stock consisted of a Pæony, some London Pride, Camomile, and two varieties of Roses, and I continued to cultivate my floral pets until we moved West. For the last thirty years I have resided near Footville, Wis., and now own more varieties of plants than I used to have, cultivate more ground, and am the owner of most of the best books on floriculture. I wish others would write to the MAGAZINE, and give their early experience in the culture of flowers, in connection with a statement of what success they now have. Please tell me how and when to plant *Datura* seed; also how I can find out what true London Pride is. I do not know of any such as I had when a child. It grew in large, sod-looking clumps, with long, narrow leaves, the flowers dark pink, growing and flowering on upright stalks.—MRS. BELVA STEVENS.

[Seed of the *Datura* may be planted as early as Corn, and plants should be two feet apart. Your London Pride was doubtless *Lychnis Chalconica*.]

CALIFORNIA ACADEMY OF SCIENCES.—At a recent meeting of the California Academy of Sciences we observe that Dr. Kellogg described five new plants. A new native pie plant (*Rumex edulis*), found on the Santa Anna road, Los Angeles County, was presented by Dr. A. W. Saxe, of Santa Clara. Mr. W. J. Howard contributed a new species of shrub from Arizona (*Dalea Arizonica*.) Also, a new, tiny Morning Glory (*Evolvulus nanus*), and a new, bitter, strong-scented weed of sandy deserts (*Psathyrotes pinnatifida*.) Mr. Howard also sent a new species of Day Flower, Flower of an Hour, also called Widow's Tear (*Comelina angustifolia*), and a new Milk-weed (*Asclepias rotata*.)

SWEET VIOLETS.—I often wonder, as the dear little modest Violet comes into bloom, if every one that cultivates flowers knows how fragrant they are, and how easy it is to secure them. You can flower them from October until May by keeping them in a cold-frame, and almost everyone can have a small one, covered, say, by six lights. I find that Violets require re-setting every fall, and the runners clipped off. The roots also must be watched, as they are subject to a disease something like club foot.—CULTIVATOR, *Buffalo, W. Va.*

HOME, SWEET HOME.

MR. VICK :—Do you really wish to create a "love of flowers among the million?" Then why do you not publish a weekly or monthly "FLORAL GUIDE"—a sort of "Home, Sweet Home" journal—devoted not to flowers alone, but to the fine art of house-keeping? Inspire the masses not only with the love of Roses, but with the love of everything sweet, pure, beautiful and clean! Make them not only the intelligent cultivators of prize Pansies, but teach them how to build cheap houses tastefully and sanitarily. Teach them how to cook intelligently. Win them away from the slow poison of their old systems of living. The "millions" are living now in darkened, ill-ventilated, ill-drained houses, eating bad food, and breathing bad air sweetly and patiently as if there could never be anything better. You, Mr. VICK, have these masses by the nose, florally speaking, and if you choose you can lead them out into a wider, higher and more cheerful existence. Is it not fortunate for you, in these hard times, that my suggestions are as gratuitous as they are impertinent.—E. H. L., *Eau Claire, Wis.*

[The above has been in our basket some time, but though it has not before seen the light, its suggestions have not been disregarded, for all these things we are earnestly endeavoring to do.]

Dwarf Pear Tree Not Fruiting.—I take the liberty of asking for a little information. I have on my place a dwarf pear tree, of the Duchess variety; it is a very thrifty tree, has been planted four years and has blossomed twice, and even twice in a season, but never produced any fruit. If you will please tell me what the trouble is, and point out a remedy, you will place me under many obligations.—J. R. H., *Troy, N. Y.*

There is no trouble with this tree; it is doing well, and will produce fruit at the proper time. The more growth it gets before bearing the more abundantly it will be able to bear afterwards. By producing flowers it shows a strong tendency to bear, but it is growing so vigorously it cannot fruit. In time it will, no doubt, do so freely. At present its thrifty condition should be maintained by good cultivation, and in a short time it will show how well it can repay, in delicious fruit, the attention and labor bestowed upon it.

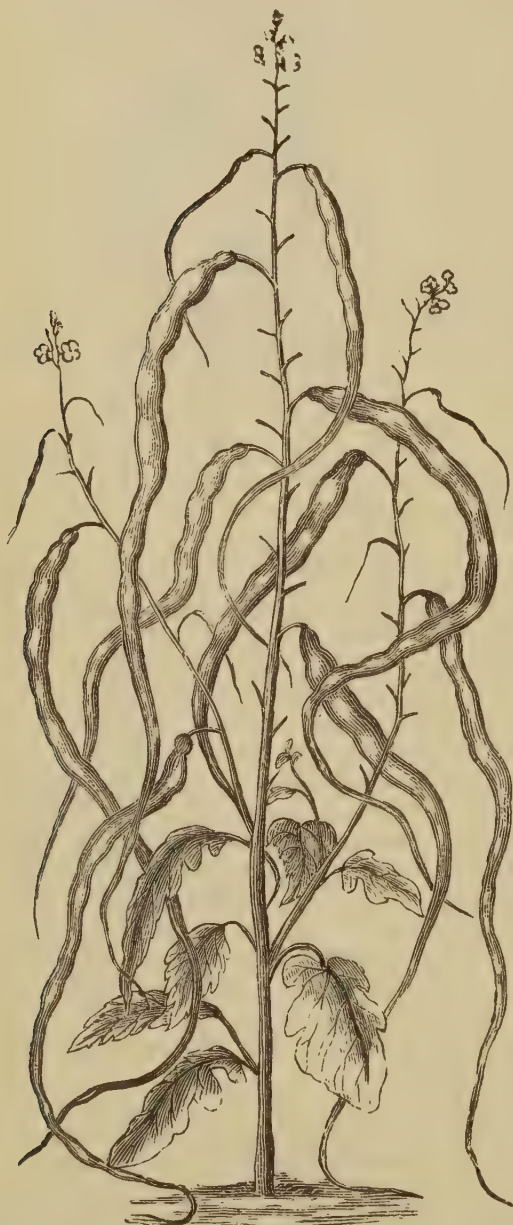
FLOWERS RECEIVED.—From J. E. DOLPH, of Nebraska, and several other of our friends, we have received specimens of *Erythronium albidum*, for name. It is commonly known as White Dog's-tooth Violet.

LARGE LETTUCE.—I grew Lettuce of the Hanson variety last year, that measured fifteen inches in diameter. Heads sweet and fine.—FRED. BEARDSLEY, *Hoosick Falls, N. Y.*

A WONDERFUL RADISH.

MR. VICK:—A friend of mine described to me a wonderful Radish he had seen, that grew, if I recollect right, several feet — not inches — in length, and bore its Radishes, or the part that was eaten, above ground. Altogether, the description was so strange that I thought well to write to you about it. Do you know of such a thing, and if so, can seed be obtained?—J. R. P., *St. Louis, Mo.*

This Radish is an old acquaintance. It is called the Japan Radish, or *Raphanus caudatus*. The seed pods are eaten and not the root, and these seed vessels grow two feet or more in



length, and are cut into convenient sizes and cooked and eaten, like Asparagus; sometimes they are also used for salad. It is one of the many things that are introduced, puffed for a year or two, and then sink into oblivion. This Radish had its day some ten years ago, and per-

haps it is about time it should be puffed into life again. Indeed, some one must have undertaken this work. For seven or eight years past, and until the present winter, no one has even mentioned this Radish; now we have several inquiries every day. It is a curious plant, but of no value. We give an engraving, taken from a specimen in our own grounds about 1865.

THE GERMANS AND THE PANSY.—JAMES VICK: Your MAGAZINE costs only ten shillings a year, but it is worth ten dollars, truly, on account of the lovely letters from your lady customers. Nearly every one is fond of Pansies. Do you know why? Because they are near relations. I will tell you how. Turn one over and you see why they are called Step-mothers by the Germans. There are five flags and five seats or chairs. The biggest flag, the mother, occupies two seats; the next two, her own daughters, each one seat, and the two last flags, her step-daughters, nearly always clad in dark mourning colors, they have to sit both together upon one chair only.—C. G. D., *Brooklyn, N. Y.*



SCABIOSA AND SMILAX.—I had a very strange Mourning Bride. It had purple and green flowers on the same stalk; the green flowers were not perfect, but were as large as the purple. The plant was strong and healthy, and was three feet high. I have a small Smilax. By an accident it got into a kettle of water, and froze into the ice. I broke it out of the ice, and put it in cold water until it thawed out, and then set it out. It is now alive as though never frozen.—B. S., *Netawaka, Kansas.*

OUR HOUSE PLANTS.—We have about forty varieties of house plants. Two years ago we built a bay-window for their accommodation, as well as our enjoyment, and it has paid us richly. A large trellis is covered with the silver-leaved Ivy, which we all admire very much. I have tried a solution of Whale Oil Soap on one of our plants that was troubled with Scale Lice, and am pleased with the result.—MRS. S. S. M., *New Providence, Iowa.*

CHEAP PLEASURE.—I never knew before that so small an outlay of time and money in the direction of flower culture would result in such an amount of real pleasure to the senses, to say nothing of the moral and æsthetic features.—C. W. T., *Mantua Station, O.*

THE PERENNIAL PHLOX.

I am glad to see that in the April number of the MAGAZINE you recommend the Perennial Phlox a little more highly than before. I wish every one would try it. You say it is about two feet high when in bloom. Now, I wish you could have seen mine; it was more than two feet before any bloom, and with bloom more than a foot long. Such perfect heads of bloom I never saw, and it flowered until frost. Last fall I had occasion to move a bunch of the Phlox, and as some seed had ripened upon it I picked it off and threw it on the place from which the old plant was taken, and covered them, little thinking what a nice lot of new plants I should have this spring. When I first noticed them I thought they came from roots of the old plant that might have been left in the ground, but on examining I found they had separate little roots of their own.—V. P., *London, O.*

If our readers knew how much it costs us to restrain enthusiasm and speak moderately when describing flowers, we should receive their sympathy rather than censure. The fact is, our readers are getting so skillful and produce such grand results, that in describing a flower or plant as grown by common cultivators, the truth seems but half told. Then there is such a disposition to exaggeration in the world that in endeavoring to avoid this weakness, perhaps, we err on the other side. Everybody can believe what we say and a little more.

PANSIES IN FERNERIES.—My Balsams were beautiful. I took several baskets of them to our Horticultural Society, where they were very much admired, and when I had the Society at my house I could not keep the ladies out of the garden. Every one said, "You must save me some seed." My Pansies were in bloom all through the mild weather of early winter, and I really felt as though I was parting with dear friends when I had them covered up. I have several Pansy plants in my Fernery, one of which has been in bloom for five weeks, and does not show any signs of fading. This was merely an experiment, but since I find they do so well I shall hereafter plant more of them, as their bright faces look very pretty amongst the ferns and Trailing Arbutus.—F. M. A., *Zanesville, Ohio.*

WINTER FLOWERS IN OHIO.—The weather in this section has been unusually mild all winter, and the ice dealers must look elsewhere for their supply. Flowers have bloomed in many gardens constantly, and at the time of writing, April 5th, the Peach and Cherry trees are in full blossom, Apple trees have quite large leaves on them, the wheat fields are like one mass of green carpet, wheat being fully six inches high; and everything looks beautiful.—L. H., *Miamisburg, Ohio.*

REMEDY FOR VERMIN.

JAMES VICK:—For so much good advice and information in your MAGAZINE I shall always be in debt to you, but as an honest man I will try to do some good in return. Numbers of your readers are troubled by ants and other insects, and want advice. You can help them. Tell them to use from one-half to one ounce of *potash* in a pail of water, and give the insects a shower-bath, and they will go without saying good-bye. Near plants and roots I do not like to use this alkali; neither do I like to destroy ants, as they are good hunters after still worse insects. Then I use Red Pepper, and create a flight that leaves not a little soul behind. For, or against, rats, mice, moles, etc., I also use a paste of potash, and put some of it in their holes or runways, where they have to walk. As they wear no shoes, they burn their feet, and, like most people, when they burn a finger, put them in their mouth, then they burn their tongues and run for water, get suspicious, and go away very fast. For cleaning trees, shrubs, etc., I use soft soap mixed with some potash and water, and instead of a brush I take the garden syringe to give some good washings.—C. G. D., *Brooklyn, N. Y.*

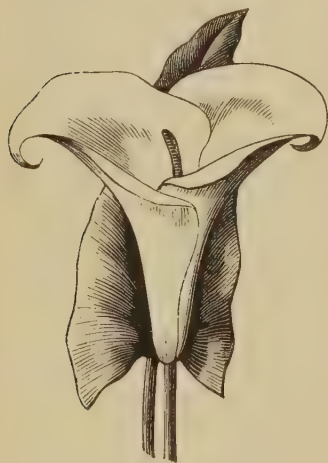
NEW CARNATION.—"I have a very fine Carnation named JAMES VICK," writes J. G. RHEA, of Griffin, Georgia, "grown from seed you sent me. It is the finest I have ever seen, very large and perfect. Ground brick color, with velvety brown stripes, a little like Othello, but darker, and larger and finer. It appears to be a shy bloomer, and is somewhat difficult to propagate."

A FLOWERY EDITOR.—My wife says, tell him about my Gladiolus and Balsams. Well, I suppose I must obey orders. As to the Gladiolus, we ordered several different varieties, three of which we have never seen equaled. They were the admiration of all who saw them, and gave us all pleasure in looking at them. They were "Agatha," "Eugene Scribe" and "Roi Leopold." As to the Balsams, they were perfect beauties, and the largest blossoms we ever had.—G. A. W., of *Gazette, Norwalk, Conn.*

SENSIBLE.—You intimate that husbands find fault with their wives for their love of flowers, and begrudge the little expense, but I wish that I was able to give my wife \$10,000 worth. History will yet tell what you have done by cultivating a taste for flowers in Republican America.—A GERMAN, *Eudora, Mississippi.*

DOUBLE CALLAS.

From all sections of the country we have received at different times specimens of Calla flowers that have become double, and in a variety of ways. Indeed, we could fill a whole page with the engravings of double Calla flowers received within a few weeks. In answer to a correspondent who has had several double flowers from different plants in the three past years, and never one before,



although having grown the Calla for a quarter of a century, and who inquires why this is so, we can only say we don't know. There may be a time in the life of a species of plants when there is a disposition to double. We have noticed more inclination in the Pansy to become double within the few past years than ever before. The engraving shows a double Calla received from Oakland, California, where this flower grows almost wild, and increases with wonderful rapidity.

Doubling Flowers.—The Petunia is my favorite. I have doubled the flowers twice, and this year I got your hybrid fringed and want to get the largest I can. I think Mr. Lockwood's must be splendid, over five inches in diameter. I would like to know how to double the Pansy. Please give me a little information on this point, if you can.—S. C. T.

We know no more about making the Pansy become double than our correspondent. If you happen to have one showing any inclination to become double, save the seed from the most double flower, and sow, and do the same every year until you get a good double flower, or until all disposition to double is lost. But, would a double Pansy be as good as a single one, with its broad masses of color, and its smiling face? Some flowers are not improved by being double. In a subsequent number we will give an article on Double and Single flowers, which will, perhaps, make the matter plain to our correspondent.

MARCH IN OREGON.—The weather is lovely, the Hyacinths, Violets and Wallflowers in bloom, as well as the Plum and Peach trees. A very ambitious Robin building a nest in the Poplar in front of our door, we thought more industrious than wise.—MRS. J. R., *The Dalles, Oregon.*

WATERING PRIMULAS.

In the April number of your MAGAZINE "Clerical Amateur" advises your subscribers to "be careful at all times about wetting the foliage and especially the buds" of the Chinese Primrose. These directions are also given in a number of floral catalogues; but I beg leave to differ with them. A friend of mine who is conceded, by professionals and amateurs, to be first-class authority on this plant—for he makes the Primulas a specialty—states that he gives his Primulas a syringing as often as his other plants. My experience is, that if grown in a living room, and the foliage and buds not wet, the leaves become dry and brown, spoiling the looks of the plant, and drying up the buds. If well grown, no plant will give as much satisfaction for the house as *Primula Chinensis*. The Cineraria is another good plant, and in a visit I made to the small green-house of a friend, this winter, I saw fifteen plants in bloom, and each one of a different color. When you buy, get the best seed for Primulas and Cinerarias. Inferior stock does not pay.—PRIMULA, *Paterson, N. Y.* [In a dry, hot, dusty room the poor plants would be glad of the water, no doubt, but the experience of florists is against this practice.]

Samphire.—What is the herb *Samphire*, and where is it to be obtained, at least the seed, and how cultivated? We have had a little dispute concerning it, and please tell us something about it.—FARMER'S CLUB.

Samphire is a marine plant, perhaps we might say, for we believe it is only found growing on the chalky cliffs by the sea-side. We have seen it growing on the Dover cliffs, and do not remember meeting it elsewhere. It has a peculiar and agreeable flavor, and its leaves, after being pickled, are used for flavoring salads. By making a chalk bed it is grown in gardens quite successfully on the sea coast. As it grows in almost inaccessible and most dangerous places on the cliffs, the gathering of Samphire is a hazardous occupation, to which SHAKESPEARE alludes—

"Half way down
Hangs one that gathers samphire—dreadful trade!"

A House Plant.—Please send your floral MAGAZINE to an old Bachelor who loves flowers, and who owes you many thanks for good hints and choice flowers. I have always given my attention to out-door plants, but FLORA has so led me captive that I shall soon procure a house plant—a genuine Hearts-ease—unless you should disapprove the plan.—M. E. D., *Decatur, Iowa.*

The plan is all right, but remember that all House Plants require wise and tender care. Some people obtain the most beautiful specimens, and treat them badly, through thoughtlessness, or worse, and they soon pine and fade and finally die. None of this, if you please, Mr. Bachelor.

FERNS AND FLOWERS OF CALIFORNIA.

I enclose three varieties of Ferns that are found here quite plentifully, especially the *Andromedæfolia*. If you do not happen to have them, and should desire it, I should be glad to send you roots of each kind. I also send you a flower and leaf for name. I notice that this flower is found in the woods of Siskiyou Co., in Northern California. This part of our country is very beautiful to look upon just now, as we have plenty of rain this season.—S. W., *San Diego, California, March.*

The specimens of ferns mentioned are *Gymnogramme triangularis*, or Silver Fern of California, *Polypodium Californicum*, and the *Andromedæfolia*. The flower is the Twining Hyacinth, *Brodiaea Californica*, of which some three years since we wrote: "Of all the pretty flowers that abound in California, we know of nothing prettier than the twining Hyacinth, figured about the natural size. The flowers are a very fine pink, or deep rose. It grows in the mountains, and twines over every bush it can reach, and the flower-stem goes to the top of the bush to which it is attached, no matter if it is five or ten feet. After it gets to the top of the bush and rests awhile to be sure it has got a good hold, it lets go of the earth and goes on blooming and seeding for weeks and months, regardless of the burning sun by day or the cool mountain air by night. The leaves are long, narrow and grass-like. The roots are very deep, and being entangled with the roots of shrubs and bushes, it is next to impossible to get them up. This plant is in flower at all times from May to September. The flower-stem breaks off near the ground, and the flowers are left swinging in the air without any connection with earth or root, supported by the bush about which it twines."

EARLY FLOWERS.—I took a walk in the woods yesterday, at my home at Chestnut Hill, and found Liverwort (*Hepatica triloba*) in full bloom. Is this not early for it? Arbutus is in bud.—N. F. C., *Philadelphia, Pa., March 11.*

FINE FLOWERING CURRANT.—The London papers say there is a *Ribes* from California flowering at Hampton Court, with flowers more like Fuchsia than anything else. It has been called *R. fuchsoides*, we believe, by MR. BO-LANDER.

WHITE POND LILIES IN CALIFORNIA.

The *Nymphæa*, or Pond Lilies, I sent for last year, have proved a great success. They arrived before the pond was finished, and I placed them in a tub with soil, and they sprouted—in fact, some of them had sprouted when I received them.



TWINING HYACINTH.

ed them. When the pond was cemented I put about six inches of soil in the bottom, and planted the roots according to your directions, and soon the leaves appeared on the surface of the water, then the buds, and I had, during the season, about twenty-five blossoms. They are the only plants of the kind in this part of the country. I have Gold and Silver Fish in the same pond, and they all do well. I have two beds of Calla Lilies that, to-day, (April 1st,) have three hundred blossoms. The Boston Smilax (*Myrsiphyllum*) covers all three porches, besides numerous trellises.—C. A. C., *San Diego, Cal.*

The above is enough to make us all long for a southern California climate, where the Callas grow and blossom winter and summer, and the Smilax is as hardy and vigorous as our Virginia Creeper. It seems rather strange that Water Lilies do not grow naturally in California.



OUR YOUNG PEOPLE.

A MONTH IN THE COUNTRY.

CHAPTER II.

The Robins have come! Yes, so I heard at least three months before I went on my vacation trip to the country, by the occasional piping of a stray Robin or two in our city door yards; but here in the orchard it seemed to me as though all the Robin gentry of the neighborhood came to Meeting. And in fact, quite a number had come to stay; for that very morning I counted no less than ten nests occupied. A few were not quite finished, others were waiting a day or two for the plastered walls of the interior to dry, while several of them contained one or more eggs of a rich-greenish blue color.

The nests were nearly all built in the lower forks of the old apple trees, a few higher



COW-BIRD.

up, while two I found in the corners of the rail fence back of the lot, on the second rail from the top. This is a common place for Robins to select, when they build in the open fields, or by the road-side. Later in the summer, I even found a Robin's nest with the mother bird in it, among the grasses and ferns on the side of a bank close to a foot-path. It contained one egg and three young birds; and they did look so comical with their eyes shut and their mouths wide open; and such mouths! my,—how I wished for a big angle worm just then. I guess I'd have seen some wiggling;

I have not yet found a nest of the common Robin, *Turdus migratorius*, with more than four eggs in it, and very often one of these will not hatch out. The Robin makes no attempt at concealment. The nest is a large, bulky affair, made of dried grasses and odd scraps, carefully walled up on the inside with clay or mud, and finished off with a few fine grasses.

The English Greybird or Thrush, and also the Blackbird, build their nests precisely like our Robins; and their eggs are also similar in size and color. The song of the English Blackbird is like that of our Robin, and the Greybird sings remarkably like some of our Robin family.

"Well, Johnny," said Uncle, as he returned from the barn, "what are you trying to study out now?"

"These little Yankees."

"What, the Robins?"

"Yes sir; I call 'em genuine Yankees;—saucy, independent like, you know; and yet brim full of good nature. Wait here a minute, and watch that fellow there. See how he confronts us, then makes a lunge or two towards us, and now he looks up square in our faces to see if we have'n't got scared yet. Now, Uncle, if you should try to go around that gentleman, he would turn and face you at every point; for there's no getting around a Yankee. Oh, he's a boss bird! and that is his lady love following close by on his left,—

"How do you know the difference, Johnny?"

"Oh, mostly by the style he puts on, and the magnificence of his wardrobe; you see the colors on that fellow are deeper and more decided in tone. Just notice his breast; what a fine, rich red, while the colors of the female are dull looking—not half so handsome."

"There, now, I think you are mistaken this time, Johnny, for you will find, according to Nature's rule, the ladies are always handsomest,—"

"And the most stylish. Yes, Uncle; that may be *human* nature, but in bird-ology it is just the reverse. Where there is a difference, it is in favor of the male, from the barn-yard

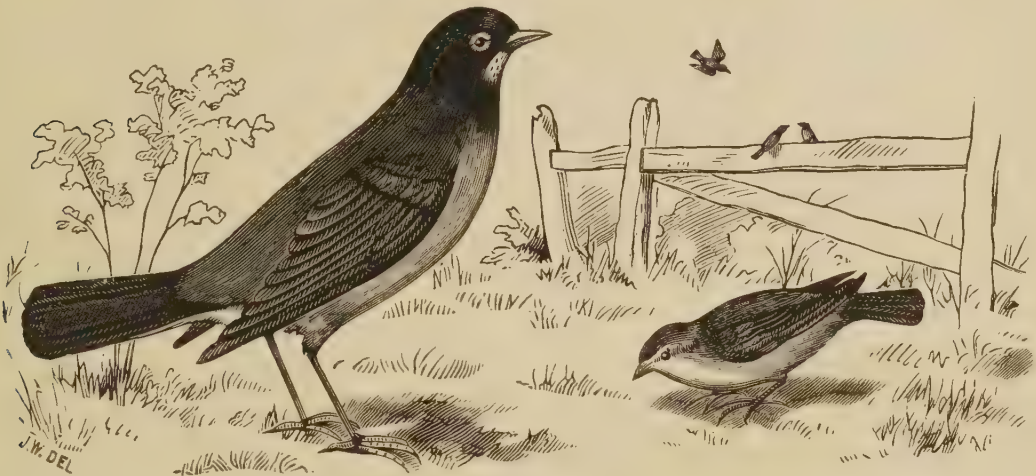
fowl up, or down, or any where else you may look."

"Well, Johnny, seeing you are so interested in birds, you may go with me this afternoon to the bay; and I rather think you will make some new acquaintances in the bird line before we return."

So saying, Uncle left me to my studies. But the prospect of such a pleasant trip did not prevent my observing the presence of a dear little Brownie as he came hopping along, chip-chipping in his quiet way. A very modest, graceful little fellow is the Ground Sparrow, or Chippie, *Spizella socialis*. He wears a plain, brown coat, streaked with black, and a rather conspicuous, rich chestnut-brown cap; his breast is ashy white, and legs quite short. This little fellow was picking up fine pieces of hay; so I followed him to an apple tree near by, and found a nest nearly finished. The Chippie

finding one where the owners have gone out on business, or pleasure, this lady takes possession of the nest and leaves her egg there, then quietly takes her departure. Now there may be some reason for this strange antic; either the birds are too lazy to build nests for themselves, or they don't know how. The name of this species is not a very romantic one. They are called Cow birds, *Molothrus Pecoris*, from an odd fancy they have of taking a ride on the cows' backs occasionally, while in the pastures. The female is homely enough to be called a Cow-bird, being of a uniform dusky grayish brown; but of the male we might expect better things, for he is a fine looking bird, clad in an entire suit of rich black velvet, with his head and neck of a deep maroon color. Their eggs are large, of a dirty-white ground, and plentifully splashed over with a cold gray-brown.

While standing under an apple tree, I noticed



ROBIN AND CHIPPING SPARROW.

builds a very neat little nest of fine, dried hay, lined with hair. The eggs are small, very fragile, of a beautiful light blue color, slightly speckled with black. There were four Chippies' nests in the orchard, on the same apple trees with the Robins, and I found one in a neighbor's haystack. The entire nest was made of white hairs, picked up in the barn yard; and in it were two eggs. Another Chippie built her nest on the ground, under a strawberry plant. The bird was sitting on four eggs, and I saw them all safely hatched and fledged, although there were several cats around.

The Chipping Sparrow is dreadfully imposed upon by the wife of a plump, sober looking, feathered gentleman. You may observe the pair slipping quietly through the trees and shrubbery, spying out their neighbors' houses. They usually look for the homes of birds that are smaller than themselves, and if fortunate in

two Chippies that seemed to be in trouble; and climbing up to the nest I found two Cow-bird's eggs in it, although the nest was scarcely yet finished. I removed the objectionable eggs and waited near by to see the little Sparrows claim their domicile. The change in their music expressed their gratitude, and they cheerfully set about finishing the nest. Next morning, however, I found another Cow-bird's egg in it, and the poor little Chippies gave up the job in despair. I thought I would examine another of the four Chippie's nests, near the front door, as I had not seen the birds around for several days. I found the nest contained one Chippie and two Cow-bird eggs!—too much for the poor little Chippies. The third nest escaped any intrusion and the young were safely reared; but the fourth, when I first saw it, contained one egg; the next morning the Chippie's egg had disappeared, and a Cow-bird's filled its place. At

the foot of the tree I saw the broken egg, doubtless thrown out by the Cow-bird.

The Cow-bird often puts the burthen of raising its young upon the Yellow-bird, Goldfinch, and the smaller song birds, imitating in this respect the strange freaks of the Cuckoos of the old country.

The Woodpecker, Nuthatch and Robin devour large quantities of grubs and insects during the season, and thereby make themselves not only useful but profitable subjects to entertain; and although the Robin helps himself to our small fruits in the fall he is worthy of it, considering the voracious appetite he has for insects that are the pests of the garden and orchard.

OUR FLORAL SCHOOLMASTER.

CHAPTER I.

The morning was quite pleasant for the month—it was in the early part of March—but the trees were still bare, and the prospect not very inviting from the windows. We were all sitting around a cheerful wood fire in the large, old-fashioned fire-place at aunt Mary's, some knitting, others sewing, and all talking over the coming event of the afternoon—the arrival of the new school-master. I was a little girl of ten summers, living with my aunt, Mrs. Benson, my mother being dead. My cousin Lucy was about my own age, and Thomas two years older. Our last teacher had been a maiden lady, stern and prim; and when she decided to give up teaching and reside with a brother, none of her pupils shed tears of sorrow. We were all pleased to have a change, but felt a little dread of the gentleman who would take Miss Clark's place.

Said Thomas—"I know one thing; he's not going to be afraid to thrash you girls well." In those days the rod was a favorite instrument with most pedagogues. "Now, as for us big boys"—drawing himself up—"that'll be a very different thing."

"Pshaw!" said Lucy, "You talk very brave now, but when he gets hold of you you'll snifle and beg, too, I expect."

Just then aunt Mary rose from her chair, saying, "Hush! children; I hear a carriage."

Sure enough, on looking out of the window we all saw a light spring wagon, and in it a gentleman and a man driving, besides some baggage.

"It must be the teacher, come earlier than we thought he would," and out bustled aunt Mary with Thomas at her heels, and a little behind him Lucy and I. We were all curious to get a look at the being whose coming had been so much talked of. Aunt Mary had

spoken to him, and he had already descended from the wagon when Lucy and I reached the front door.

"Come, Thomas, bring in Mr. Ellison's trunk and basket. You know which room he is to have. Walk in, Mr. Ellison, to the fire. It must be cold, riding."

"Thank you," said Mr. Ellison, "I will be in in a moment. No, Thomas, I will carry the basket if you please, and then be out directly to help bring in the trunk."

Then carefully, *very* carefully, he raised a queer-looking basket and slowly carried it into the hall, past Lucy and I, who moved to one side that he might easily pass. His eyes were fixed so intently on the basket, that he seemed not to perceive us children until he had carefully placed it near the wall, and turned to go out again to the gate. Then a pleasant smile lighted up his face as he said, "Good morning, my dears,"—and he hurried out.

Lucy whispered, "He looks pleasant, don't he, Hetty? But what can he have in that queer basket?"

She had no time to say more, for Thomas and Mr. Ellison were coming up the steps with a small, hair trunk, and Lucy and I retreated to the sitting-room. After the trunk had been deposited in the proper apartment and a few minutes had elapsed, Mr. Ellison stepped into the sitting-room with the large basket in his hand.

"It seemed to me, Mrs. Benson," said he, "that these young misses eyed my baggage with rather inquisitive glances, and I think I must gratify their desire of finding out what is hidden here."

"By no means," said aunt Mary, looking reprovingly at Lucy and me. "Do not take the trouble."

We blushed, but he evidently enjoyed our confusion a little, and seemed determined to open the basket.

"If you please, Mrs. Benson," said he, "let me have the use of that stand in the corner a few minutes, and I will bring out my treasures."

Thomas brought the stand, and then appeared to our admiring eyes one of the most beautiful plants I ever beheld, covered with delicate, bell-shaped blossoms, all red and white. Two other smaller pots were then brought out, one containing Lilies of the Valley, and one with a Hyacinth just budding.

"You see now, Thomas," said Mr. Ellison, smiling, "why I was so careful of my basket. This plant"—pointing to the large one—"has been my pet for years, and I am loth to let any one but myself lift or care for it."

In those days window-plants were not culti-

vated as now, and this plant, with its waxy blossoms, and bright foliage, seemed like a piece of summer come into our house, or a visitor from some tropical clime. Lucy and I gazed in silent delight on the beautiful blossoms, and Thomas walked round and round the stand, as much pleased with the sight as any of us. Aunt Mary had much to say, for she was fond of flowers and shrubs herself.

Mr. Ellison asked permission to leave the plants in the sitting-room until the weather should be warm enough to place them out of doors. Aunt Mary gladly consented, and we girls were highly pleased at the idea of their remaining where we could enjoy the sight of their beauty.

CHAPTER II.

As you may suppose, the man who was so tender of his flowers was alike gentle and tender towards his pupils. His mild, blue eyes seemed filled with love toward them, and the timid little ones who never approached Miss Clark without trembling, would nestle confidently against Mr. Ellison and look lovingly in his face, while he would praise them for good lessons, and call them by names of little flowers.

"Well done! little Daisy," he would say, "let's see if little Pink over there can spell as well. Or little Rose-bud here."

The large boys seemed to do as well from kindness as they had ever done from fear of the rod, and seemed to take much pleasure in doing little things they would have scorned to do before. They would help tend the few shrubs in the little yard, and ask questions about plants until Mr. Ellison began a series of talks on Botany that were both interesting and instructive.

Outside one window was a nice little bed, prepared by our teacher's own hands, where cuttings of choice roses, brought by himself from the city, were rooted, and bye-and-bye presented in pretty little pots to diligent scholars, as prizes. No high-priced books or other things could have conferred more pleasure than did these floral presents; and an air of refinement seemed to cling around the old school-house with the honeysuckle vine covering the porch.

I must not forget to write a little about Tom Frost, one of the scholars. Before Mr. Ellison came Tom used to hate school, and although not stupid out of doors, seemed very dull as soon as he entered the school-room. He was fond of roaming the fields and woods, and was punished often for playing truant. After such jaunts he would almost always be showing the boys little things he had picked up—curious rocks, or singular leaves of plants. He had quite a collection of dried ferns; and many times when he appeared to be studying, he

would be gazing at some of his dried specimens. As soon as Mr. Ellison began his talks on Botany Tom seemed to wake up. His eyes would look bright and his whole manner interested. He would surprise the other boys often by asking questions that indicated much thought, and frequently would surprise Mr. Ellison himself by describing the habits of plants he had noticed; and he proved a valuable assistant in getting specimens to analyze. From Botany Tom seemed to get a desire to know more about other studies, especially Philosophy and Astronomy; and two years from the time Mr. Ellison came among us Tom had developed into a bright scholar, to the delight of his parents and teacher, and the surprise of his school-mates.

The affection of the whole community seemed to be awarded to Mr. Ellison. Years came and went while he was still at his post. An ornamental, commodious academy replaced the old, brown school-house, and the children of his first pupils gathered around him. At last the kind old teacher was laid away, and the little nook where he reposes is bright with the flowers he loved, and no weeds are allowed to intrude on the sacred spot.

A YOUNG GARDENER.

DEAR MR. VICK:—I have been much interested in reading your MAGAZINE, which mamma received a short time ago. I am just old enough, Ma says, to appreciate flowers and learn their names and habits, and to help take care of them. We have eighty-three boxes and crocks of flowers. A beautiful scarlet Verbena is in bloom at this time, also a fine pink Geranium; and last, but not least, an ever-blooming Rose called the Aurora. I wish you could see them: never were finer blooms. I am eight years old, and assist my mother in taking care of all her plants. There are some other plants I would like to have, but we cannot afford to buy them now. I did want a Calla, a few Crocus, Hyacinths and Tulips; also a Caladium esculentum, and some others. When I get my education and can earn some money, I will start a green-house, perhaps, and support my mamma by raising and selling flowers and vegetables. Then, MR. VICK, I'll do like you, encourage people to grow flowers. I took the Aurora Rose to the house of a neighbor for the pleasure of a lady who has been sick some time. WILLIE C. S., *Marion Center, Kas.*

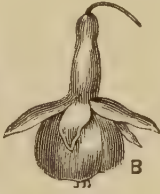
[We hope the Boys and Girls will write to us often, and tell what they are doing in the way of gardening. Perhaps we may be able to aid them somewhat if they meet with any difficulties or discouragements.]

BOTANY FOR LITTLE FOLKS.

A flower consists of several parts, some of more and some of less importance. Usually there is a whorl of what appear like little green leaves on the under side, or outside of the flower, as seen in the rose-bud, *fig. 40*, where



Calyx.
Fig. 40.



Fuchsia.
Fig. 41.



Nemophila.
Fig. 42.

the letter A is situated; this outer covering of the flower is called the *calyx*. The parts of the calyx are called *sepals*. The calyx, though usually green, is not so in all flowers; for instance in the Fuchsia, *fig. 41*, which has colored or white sepals, large and showy; and numerous similar examples can be given. The calyx in some flowers is not separated into parts, or rather, the parts may be said to be united the whole or a part of their length, thus forming a tube.

Inside of the calyx is usually another whorl of parts called the *corolla*, and the separate parts of the corolla are called *petals*. In *fig. 42* are seen the five petals of the Nemophila. The corollas of some flowers are not divided into petals, or rather, it is thought that the parts are united by their edges, as shown in the Morning Glory, *fig. 43*. The corolla, in different kinds of flowers, assumes a great variety of forms, some of which are illustrated in the following pages. The corolla is usually the bright colored part and what is most admired for its beauty in a flower; but both the corolla and the calyx are considered only as the wrappings, to protect and cover the more valuable parts which are enclosed within them.



Sedum. *Fig. 44.*

Let us look again and see if we can discover another whorl inside of the corolla. Here, *fig. 44*, is a flower of Sedum, or Stone Crop, showing inside of the row of petals a whorl of slender, thread-like bodies, each of which has a little knob on its upper end; these organs are called *stamens*. The slender part of the stamen is called the *filament*, and the knob at the end

the *anther*. By looking closely again at the flower, *fig. 42*, we can perceive still another row or whorl of organs at the center of the flower; these are called *pistils*.

Fig. 45 shows these pistils on a larger scale; there are five of them, corresponding to the number of petals and sepals. The diagram, *fig. 46*, shows the position of all the organs in this flower. The five curved lines of the outer whorl represent the calyx, the five lines of the second row or whorl are for the corolla, and inside of these are ten little oval figures around five others, showing the position of the ten stamens standing around the five pistils at the center. The line running from the



Fig. 45.

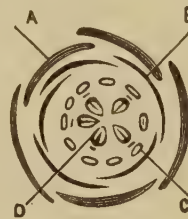


Fig. 46.

letter A to the first whorl, indicates the position of the sepals or parts of the calyx; the line B, running to the second whorl, shows the situation of the petals or parts of the corolla; the line C shows the stamens, and the line D the pistils.

Both the stamens and the pistils take quite a variety of shapes, and vary in number in different kinds of plants. Pistils are often united so as to form only one upright column and then divide at the head. All the parts of a pistil are shown very clearly in *fig. 47*. The base, J, is called the *ovary*, the slender, upright part, I, the *style*, and the swelling at the top, H, the *stigma*. If our readers will take some flowers and carefully remove the calyx and the corolla, they will be able to recognize the stamens and pistils and their parts as Pistil. *Fig. 47*. they have been described, and become familiar with them.



The interior of the ovary is a single space, or two or several compartments separated by walls. One or more little, round bodies form



in the ovary, and are attached to the inner surface; these little bodies are called *ovules*, and are destined to become the seeds of the plant. An ovary cut open is represented by *fig. 48*, showing a number of ovules attached to the inside of the ovary. Within each ovule there is a minute little substance called the *embryo*, which is to become the future plant. The embryo of a Morning Glory magnified, is shown in *fig. 49*. The little curved and curled body, here

represented lying in the seed, is the embryo, the germ or starting point of a new plant. The germ or embryo in its simplest form, and of a most minute size, is in each little ovule, but it cannot grow, nor can the ovule become a seed until it undergoes a very curious process which will now be described.

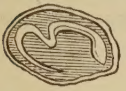


Fig. 49. Embryo.

The upper portion of the stamens, the *anther* as it is called, when it arrives at a certain stage, bursts open and scatters a very fine powder or dust, as represented by fig. 50. Some of this dust or *pollen* either falls directly upon the stigma or is carried to it in the air or by insects. When it reaches the stigma, which is covered with a sticky fluid, it becomes attached to it, and each grain of the pollen begins to grow, and sends down a tube from the stigma, through the style to the ovary, and into the little ovule, directly to the germ or embryo. It is necessary that one grain of pollen should send down a tube into each ovule. When the tube of the pollen grain has entered the ovule, the ovule is said to be *fertilised*, and is capable of growing and becoming a perfect seed that will produce a plant of its kind. Any little ovule which is not thus fertilised by the pollen grain will cease to live, and will shrivel up in the ovary. At fig. 51 is a cut of the common Pea; here we see that the ovary has grown from its small size when in the flower, to a large pod holding the fully developed seeds or Peas. We have all of us noticed in Pea-pods what appear to be little Peas just started but not grown;—these are ovules which have not been fertilised, and therefore have not developed. There are many curious and wonderful things known about all parts of the flower that cannot be noticed here.



Fig. 50. Anther discharging pollen.

From the descriptions that have been given, it is evident that the flower is for the production of seed, and that the necessary parts for this purpose are the pistils and the stamens,—the calyx and the corolla serving to cover and protect them in their earliest stages of growth. There are some flowers which have only stamens and pistils, without calyx or corolla; and again, some have a calyx but no corolla. The flower is usually attached to the plant by a stem called the *peduncle*; the upper end of the peduncle is flattened and spread out a little, bearing the flower upon it,



Fig. 51.

and this flattened end of the flower-stem is called the *receptacle*.

A few of the more common forms that the corolla assumes in different kinds of flowers are here shown. A flower such as is seen at fig. 52, appearing like an open mouth, is said to be *labiate* or *bilabiate*, that is having lips; the Catnip, Rosemary, Thyme, and all of the Mint family, produce such flowers. When the lips stand very wide apart, as in fig. 53, the



Fig. 52. Labiate or Bilabiate Corolla.



Fig. 53. Ringent Corolla. Salvia.

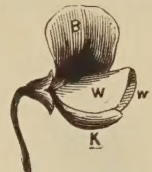


Fig. 54. W, W, Wing; B, Banner; K, Keel.

corolla is called *ringent*, which means grinning. The Pea blossom, fig. 54, is of a very peculiar shape. It has five petals, and they are always arranged so that one stands up straight and is called the *banner*, two are arched over towards each other and are called the *wings*, and one sets underneath the others and is called the *keel*. If you will examine the flower of a Pea or a Bean or a Locust tree, you will see this arrangement. A corolla of regular shape and spread out nearly flat, as is the flower of the Potato, fig. 55, is called *rotate* or wheel-shaped.

A bell-shaped flower is seen at fig. 56, and is easily recognised. It may be well to inquire here why botanists are not satisfied with so good a word as *bell-shaped* and use it, and not say *campanulate* when they mean bell-shaped. The

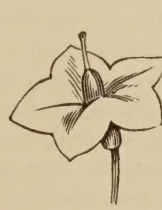


Fig. 55. Rotate Flower of Potato.



Fig. 56. Campanulate or bell-shaped.



Fig. 57. Gloxinia. T, Tube.

answer to this is that although this is a very good word, we could not find good English words to give to all kinds of flowers, and to all the parts of plants and flowers. But if we could find good English words for all these things, and should so name them, and the Frenchman should give them French names, and the German, German names, the Spaniard, Spanish names, and so the world over, there would be as many names applied to them as there are languages and dialects. Then, when

we want to read upon these subjects in German or French or any other language, we should be obliged to learn the meaning of their terms, which would take much time and be very annoying. As it is now, the terms and names being in Latin, when they are once learned are understood in every language. We have in our office a Japanese botanical work, and although the body of the writing is in the curious Japanese figures, yet the names of the plants are in good, plain Roman letters, and read *Primula* and *Veronica* just as we would write it. Other



Fig. 58. A Compound Flower.



Fig. 59. Lily.

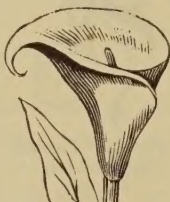


Fig. 60. Spathe enclosing Spadix.

reasons could be given why Latin words are used instead of English, but our young readers must be satisfied with what has been said, and to know that persons of good judgment all over the world have agreed that this is the best way. By using the proper words and terms of a science you soon become familiar with them.

A flower like that shown at fig. 57 is called *tubular*; the part marked T is the tube, the part at the open end spread out flat is called the *limb*, and the open end is the *throat*. Fig. 58 shows a compound flower—a great number of separate flowers joined together in a head. We commonly speak of these—such as the May-weed and the Sun-flower—as single flowers, while really they consist of numerous single flowers of two kinds, one kind standing around the margin and called the *ray-flowers*, and the others occupying the center called *disk-flowers*.

Flowers having a general resemblance in shape to a lily, as shown at fig. 59, are called *lily-shaped* or *liliaceous*. At fig. 60 is shown the blossom of the Calla or Richardia, one of the most common house-plants, and what apparently is the flower—the large white envelope—is not the real flower, but is what is called a *spathe*. Inside of the spathe is the yellow *spadix*, which is the name given to a great number of flowers seated on and around a central stem.

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

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